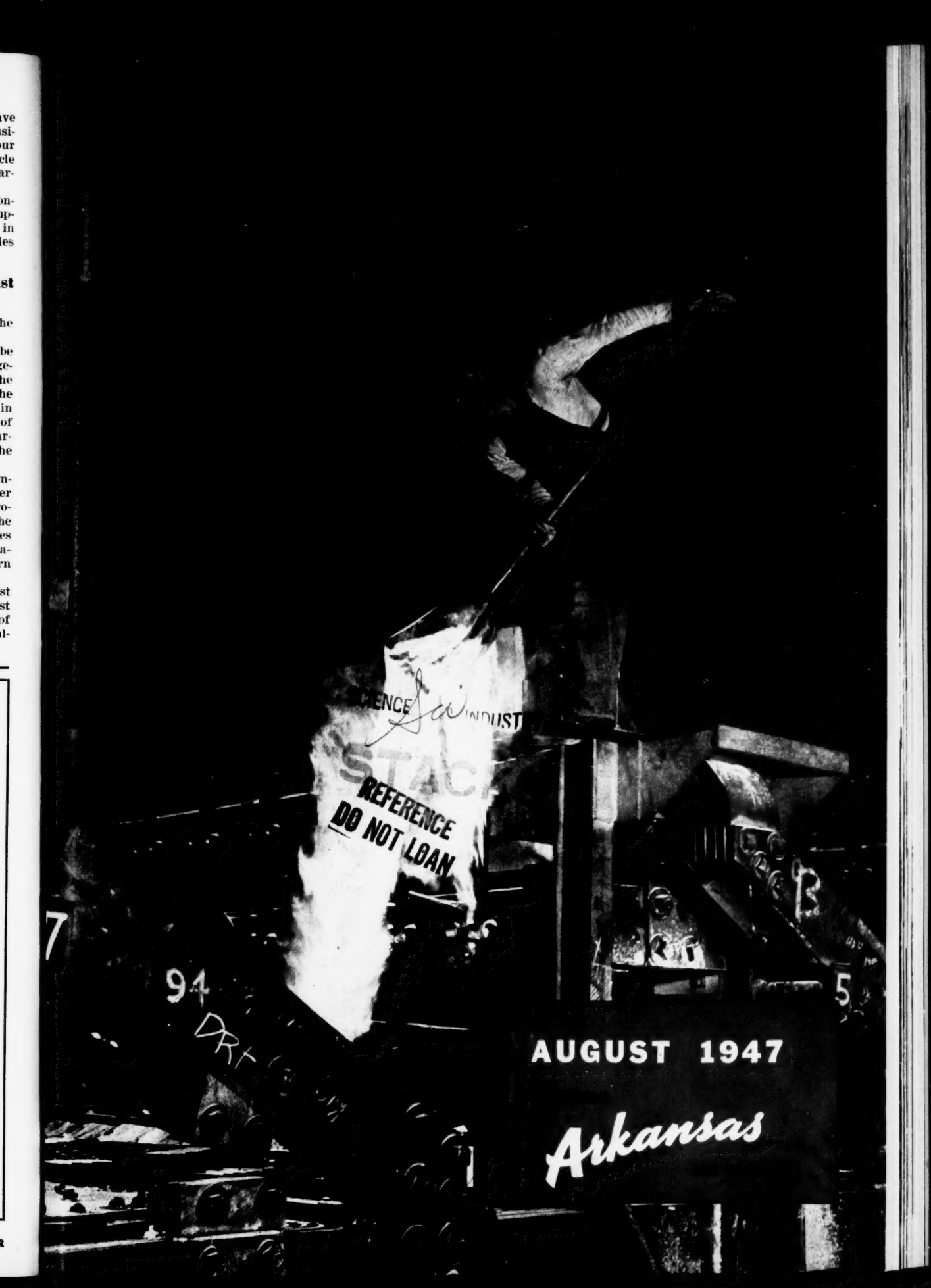
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AUGUST 1947
Arkansas

IT'S A GREAT PLACE TO WORK...

John, Will and James Parrish

say Will Parrish and his two sons, John and James

FAMILY TEAMS ARE A TRADITION

at International Phosphate Mines

Will Parrish joined International in 1909 and is now engaged in the responsible duties of Settling Ponds Supervisor. His oldest son, John Edward, after seventeen years of service, is now Master Mechanic of Mt. Pleasant operations. After three years of Navy duty, James Byron, the younger son, returned to his pre-war job as Mine Clerk.

WHEN YOU ORDER International Phosphate Rock you get prompt, efficient service and a quality product refined to precise specifications because of the experience, technical skill and fine spirit of cooperation of men such as Will Parrish and his sons, John and James.

These men and hundreds of others, both veterans and up-and-coming youngsters, are proud of their work in International's phosphate mines in Florida and Tennessee. Their high standards of performance have helped make it possible for International, year after year, to expand its production of quality phosphates for industrial and agricultural use.

Many things are contributing to International's continuing leadership in supplying Phosphate Rock for domestic and foreign markets. Men of competence and character—long-range engineering research—new mines—mechanization of mining and refining operations—and the natural pride of achievement in producing the phosphates which are so essential in the growth of food crops throughout the world.

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General Offices: 20 North Wacker Drive, Chicago 6

MANUFACTURERS RECORD

ESTABLISHED 1882

A Publication for Executives

Volume 116 AUGUST, 1947 Number 8

EDITORIALS

Appeasement 65
Why Stop Halfway? 66
What the South Is Making 66
Precept and Performance 67
The Gwinn Investigation 67
Notable Railroad Merger 67

ARTICLES

ARKANSAS 85
Manufacturing 86
Agriculture 97
Forests 104
Minerals 109
Transportation 113
Power 116
Education 118
State Finances, Taxes 121
Recreation 123
The Naval Stores Situation—by J. A. Daly 73
Southern Contracts During July Valued at $166,320,000 74
New Orleans—Gateway to the Nation's Heart 76
Chemical Wealth in the Kanawha Valley—by T. R. Ragland .. 78
Men in Boots—by Robert L. Kidd 80
Tobacco, Sixth Southern Industry—by Caldwell R. Walker.... 130
Childersburg Newsprint Mill Advances toward Construction ... 154
Train Telephone Service Operating 156
National Market Survey Made by Curtis Research Department.. 156

DEPARTMENTS

New and Expanding Plants 9
Potomac Soundings—by Lawrence Sullivan 15
Little Grains of Sand 23
Southern Business Outlook 68
The Southeast—by John Mebane 69
Birmingham District—by R. W. Kincey 69
Piedmont Area—by J. A. Daly 70
The Southwest—by Dan F. Summers 72
Tennessee News—by George I. Whitlatch 132
1947 Plant, Equipment Outlays 132
New Products 82
Southerners at Work 146
Trade Literature 158
Index for Buyers 186
Index of Advertisers 188

Cover Illustration—Scene in an Arkansas Aluminum Mill. Arkansas Article on page 85.

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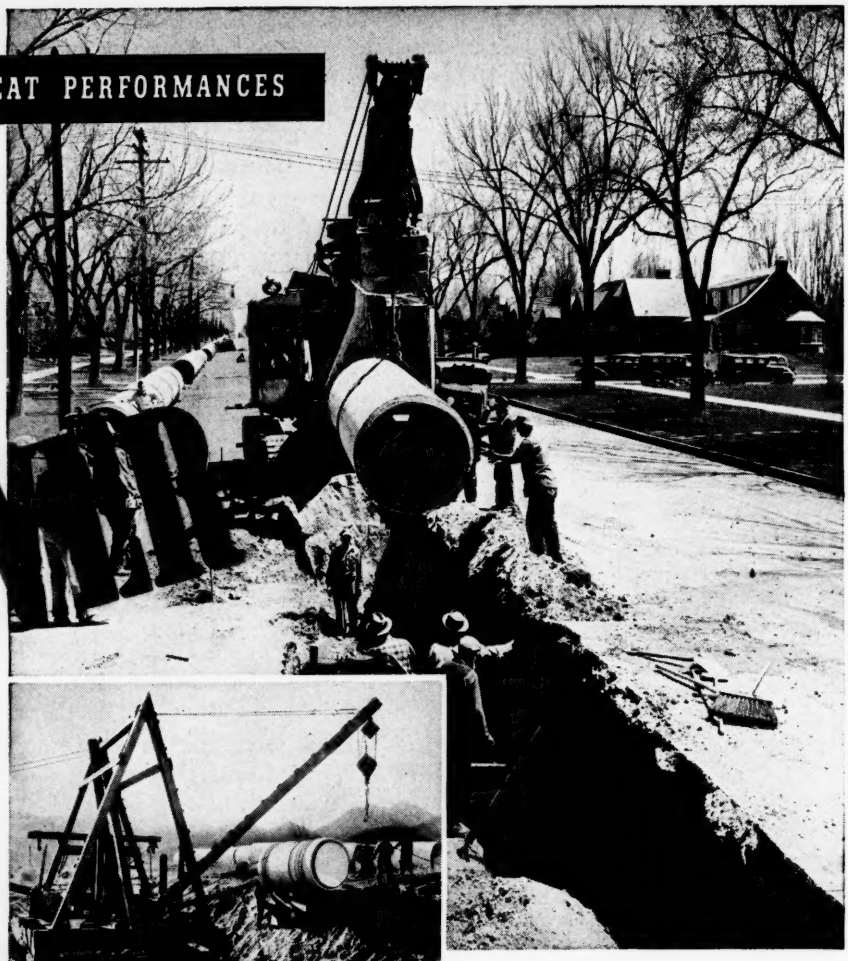
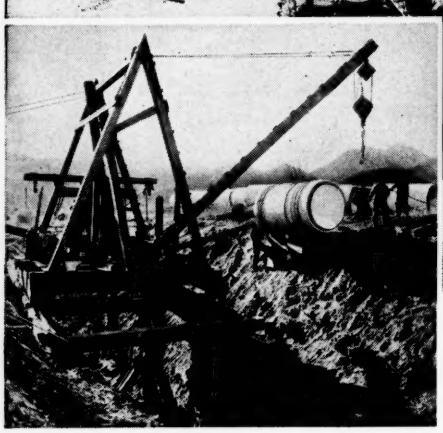
LOCK JOINT REPEAT PERFORMANCES

DENVER

13 JOBS SINCE 1920





1940 – Above: Installing 48" pipe through center of street in residential area.

1921 – Left: Installing pipe with old type wooden derrick astride ditch.

To meet the enormous demands of increasing population and expanding industry, Denver has steadily extended its water supply system. Since 1920 Lock Joint Pipe Company has been awarded 13 major water works contracts totalling approximately 90 miles of Reinforced Concrete Pressure Pipe. Such repeat orders, not only for Denver but for many other key cities, are convincing evidence of the incomparable quality of Lock Joint Reinforced Concrete Pressure Pipe.

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Established 1905

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NEW AND EXPANDING PLANTS

COMPILED FROM REPORTS PUBLISHED IN THE DAILY CONSTRUCTION BULLETIN

ALABAMA

ALABAMA CITY—Dwight Manufacturing Co., installation of air conditioning system.
BESSEMER — Bessemer Broadcasting Co. standard broadcast station.
BIRMINGHAM—Virginia Bridge Company plant.
BIRMINGHAM—Industrial Paint Manufacturing Co., plant, $11,000.
BREWTON—T. R. Miller Mill Co., expansion program.
CHILDERSBURG—Coosa River Newsprint Co., $30,000,000 news print mill.
GADSDEN—Alabama Power Co. plant.
GADSDEN—General Newspapers, Inc., radio station.
GANTT—Alabama Electric Co-operative $3,500,000 plant.
GREENVILLE — Greenville Broadcasting Co., radio station.
HUNTSVILLE — Pfister Associated Groceries, Inc., plant, $10,000.
LEEDS—Jack Spruill, creamery, $31,500.
MOBILE—Giddens & Rester, FM broadcast station.
MOBILE—Mobile Daily Newspapers, Inc., broadcast station.
MONTGOMERY — Alabama Machinery & Supply Co., building, $14,500.
MONTGOMERY—Dairy Producers factory, $125,000.
SYLACAUGA — C. H. Arnold Warehouse, $15,366.
THOMASVILLE — Thomasville Industries, Inc., plant, $50,000.
WENONAH—Tennessee Coal, Iron & Railroad Co., bathhouse, $165,000.

ARKANSAS

ARKADELPHIA—Merchants Milling Co., new plant.
ARKADELPHIA — Arkadelphia Broadcasting Station, broadcast station.
ARKADELPHIA—Hollywood-Maxwell Co., addition.
BEARDEN—A. P. Simons Co., plant.
CORNING—Knobel Milling Co., mill.
EL DORADO—Wood Manufacturing Co., addition.
FORREST CITY—Forrest City Broadcasting Co., Inc., broadcast station.
HARRISON—Harrison Die Casting Corp., buildings.
HARRISON—Kenneth Milburn, plant $20,000.
HOPE—Hope Beverage Company plant.
HOPE—Hope Broadcasting Co., radio station.
JONESBORO—Jonesboro Grapette Bottling Co., plant.
JONESBORO — Jonesboro Milk Producers Cooperative, $60,000 pasteurization plant.
JUDSONIA — Great Lakes Packing Co., plant.
MAGNOLIA—Ark-La Cotton Oil Company, $25,000 building.
MALVERN — expansion. Van Veneer Co., plant.
MARSHALL—John Barnes, locker freezer unit, $28,000.
MONTICELLO—Ward Brothers Manufacturing Co., doubling present plant.
NEWARK—General Box Company, buildings.
NORTH LITTLE ROCK — Southwestern Broadcasting Co., radio station.
OSCEOLA—Producers Cooperative, $100,000 plant.
OZARK—Gus Elan, shop building.
PINE BLUFF — Universal Broadcasting Corp., frequency change.
TUCKERMAN — Tuckerman Warehouse & Elevator Co., $25,000 rice drier.
WALDO—Clarence Seigal, plant.

DISTRICT OF COLUMBIA

WASHINGTON — National Broadcasting Co., Inc., television relay broadcast station.
WASHINGTON—Station WINX, station.

FLORIDA

BELLE GLADE — Seminole Broadcasting Co., radio station.
BROOKSVILLE — Austutz Motors Co., alterations and addition.
CLEARWATER — Springtime City Broadcasting Co., FM broadcast station.
DADE COUNTY—American Oil Co., fire wall and dike, $15,927.
DADE COUNTY — Citizen's Ice Co., ice plant, $21,000.
DADE COUNTY—Dirr Sausage Co., repairs, $16,400.
DAYTONA BEACH—News-Journal Corporation, FM broadcast station.
DEFUNIAK SPRINGS—Richard Chevrolet Co., sales and service buildings.
FORT LAUDERDALE — Tropical Radio Telegraph Co., receiving station, $200,000.
FORT LAUDERDALE—H. O. H. Cold Storage Co., cold storage plant.
JACKSONVILLE—Jacksonville Broadcasting Corp., FM broadcast station.
JACKSONVILLE — Florida Broadcasting Co., FM broadcast station.
JACKSONVILLE — Metropolis Co., FM broadcast station.
JACKSONVILLE — Billy Averitte Laurie Portable pickup station.
JACKSONVILLE—Bemis Brothers Bag Co., buildings and installation of machinery.
LAKELAND—Radio Station WLAK, radio station.
MIAMI — Miami Broadcasting Co., remote pickup broadcast station.
MIAMI—Canada Dry Bottling Co., addition to warehouse, $35,000.
MIAMI—Harold Friedman, shop.
MIAMI — Irving Applebaum, warehouse, $30,000.
MIAMI BEACH — Miami Beach Employees Holding Co., Inc., auditorium.
NORTH MIAMI—H. W. Cochran, launderette, $10,300.
MIAMI BEACH — The Texas Co., garage, $23,000.

New and Expanding Plants Reported: July--266 1947 to date--1,935

NORTH MIAMI BEACH—Southland Broadcasting Corp., broadcast station.
ORLANDO—Central Corp., garage, $10,000.
ORLANDO — Dr. Phillips Co., plant, service station, $25,000.
ORLANDO — Florida Agricultural Supply Co., $20,000, alterations and additions to existing buildings.
PANAMA CITY—St. Andrew Bay Broadcasting Co., broadcast station.
PANAMA CITY—Panama City Shirt Factory, $79,000, factory.
PANAMA CITY—Nelson Chevrolet Co., alterations, additions.
PENSACOLA — Gulfport Broadcasting Co., Inc., station.
TAMPA—Florida West Coast Broadcasting Co., broadcast station.
WAUCHULA—Peace River Valley Electric Membership Cooperative, Inc., building.
WACHULA — Peace River Valley Electric Cooperative, $84,500, office and warehouse.
WINTER HAVEN—Seaboard Air Line Railway Co., $62,500, alterations.

GEORGIA

ALBANY—Graton & Knight, heavy leather tannery.
ATHENS — Hodgson's, Inc., adding two mills.
ATLANTA—Alston-Lucas Paint Co., plant, $90,000.
ATLANTA—Atlanta Journal Co., transmitter.
ATLANTA—Georgia Power Co., addition.
ATLANTA — Constitution Publishing Co., FM broadcast station.
ATLANTA—Brown Boy Bottling Co., plant.
ATLANTA — Sherwin Williams Paint Co., warehouse.
ATLANTA—Coca Cola Bottling Co., garage, $77,000.
ATLANTA—Coca Cola Bottling Co., $150,000, additions and alterations.
AUGUSTA — Edward E. Heath, $55,875, garage.
BAINBRIDGE—Clark Thread Co., plant.
BREMEN—Sewell Manufacturing Co., additions, alterations, $60,000.
BRUNSWICK — Brunswick-Islands Broadcasting Co., radio station.
CEDARTOWN—Polk County Frozen Food Bank, converting Cherokee Creamery into a modern locker plant, $50,000.
CLARKSDALE—Clark Thread Co., $210,000, mill.
COLUMBUS—Muscogee Manufacturing Co., plant, $45,000.
COLUMBUS — Georgia-Alabama Broadcasting Corp., station.
DECATUR — Erutih Dicinson Rivers, WEAS, radio station.
DOUGLAS — Brunswick-Islands Broadcasting Co., radio station.
GRIFFIN — Ed Smith Motor Co., $83,713, auto service and display building.
MACON—Lee Baking Co., bakery, $400,000.
MOULTRIE—Fresh & Frozen Foods, Inc., plant.
NEWNAN—Newnan Cotton Mills, building.
SAVANNAH—South Atlantic Gas Co., $561,000, additional mains and other service betterments.
TOCCOA—R. G. Le Tourneau, broadcast station.
WAYCROSS—Ware Broadcasting Co., radio station.

KENTUCKY

CORBIN—Corbin Times-Tribune, station.
FAYETTE COUNTY — Dudley R. Kelly, dairy, $10,500.
LAWSON — Kentucky Mountain Holiness Association, broadcast station.
LOUISVILLE—U. S. Engineer Office, storage building, AGF Board No. 2.
LOUISVILLE — Louisville and Nashville Railroad, shop, $470,000.
LOUISVILLE — Southern Bell Telephone Co., $260,000 telephone exchange, $110,000 addition.
LOUISVILLE — American Tobacco Co., $200,000, plant.
MADISON COUNTY — Clark Motor Co., garage, warehouse and apartments, $16,750.
MOREHEAD — Tennessee Gas and Transmission Co., experimental compressor station.
NICHOLASVILLE—Garland Holcomb, bus station, $9,250.
PADUCAH—Paducah Broadcasting Station, antenna and change transmitter location.
PRINCETON — Robinson Implement Co., equipment and supplies, $15,600.
SOMERSET—T. B. Sears Lumber Co., warehouse, $15,000.

LOUISIANA

LOUISIANA — Sun Oil Co., plant.
BASTROP — Morehouse Broadcasting Co., radio station.
BATON ROUGE—Ethyl Corp., medical and personnel building.
BERWICK—City, natural gas transmission and distribution system, $162,895.
BOGALUSA—I. K. Corkern, radio station.
EVANGELINE—Central Louisiana Electric Co., $2,600,000, plant.
LAFAYETTE — Coca-Cola Bottling Co., plant $140,000.
HARVEY — O'Connor-Oakes Company, business building.
LAKE CHARLES—Frank R. Gibson, station.
LAKE CHARLES — Woolman and Allen, $58,266, auto sales room and garage.
LOUISVILLE—Station WHAS, Inc., broadcast station.
MONROE—H. F. Shepard, building, $16,750.
NATCHITOCHES—Wood Breazeale, plant, $60,000.
NEW ORLEANS — Charles C. Carlson, transmitter, install new vertical antenna and

(Continued on next page)

change transmitter location.

NEW ORLEANS—Charles L. Doerr, warehouse.

NEW ORLEANS — Orleans Levee Board, $28,670, bus shelter.

NEW ORLEANS — Carrere Construction Corp., $1,000,000, plant.

NEW ORLEANS—Times Picayune Publishing Co., broadcast station.

NEW ORLEANS — McLellan Supply Co., warehouse, $10,000.

NEW ORLEANS — American Creosote Works, alterations to plant office.

NEW ORLEANS—Blue Plate Foods, Inc., addition.

OPELOUSAS—Kjan Broadcasting Co., Inc., radio station.

SHREVEPORT—Mosher Steel Co., plant.

SHREVEPORT—Slattery Co., Inc., $14,578, alterations.

SHREVEPORT — Texas Company, service station, $20,630.

MARYLAND

ANNAPOLIS — Capitol Broadcasting Co., FM broadcast station.

BALTIMORE — Consolidated Gas, Electric Light & Power Co., $38,500 sub-station.

BALTIMORE—Carroll J. Roush, loading dock and office, $75,000.

BALTIMORE—E. I. du Pont de Nemours Co., alterations, $30,000.

BALTIMORE—Belle Grove Corp., factory, $20,000.

BALTIMORE—Bethlehem Steel Co., addition to boiler room.

BALTIMORE — Chesapeake and Potomac Telephone Co., $2,956,000 expansion.

BALTIMORE—C. Hoffberger Co., tank.

BALTIMORE—Curtis Motor Co., additions and alterations.

BALTIMORE—Noxzema Chemical Co., addition.

BALTIMORE—The Milton R. Lerch Realty Co., building, $35,000.

BALTIMORE—American Brewery, Inc., alterations and additions, plant, $200,000.

BALTIMORE—Consolidated Electric Light and Power Co., Holder Station.

BALTIMORE — A. D. Anderson, service building, $50,000.

BALTIMORE — A. D. Anderson, building, $21,000.

BALTIMORE—Weiss Motor Co., addition service building, $35,000.

BALTIMORE—Samuel I. Flom, warehouse, $15,000.

BALTIMORE—Standard Supply & Equipment Co., warehouse, $25,000.

BALTIMORE — Leland Construction Co., building.

BALTIMORE—A. S. Abell Co., television broadcast station.

BALTIMORE — Standard Oil Co., tanks, $30,000.

BALTIMORE — Standard Oil Co. of New Jersey, filling station.

BALTIMORE—Fox Chevrolet Co., addition to auto show room.

BALTIMORE — Antonio V. Giorgio, auto salesroom, $13,000.

BALTIMORE — Charles A. & Anna K. Spann, service station, $21,000.

BALTIMORE — Becker Pretzel Bakeries, Inc., raising roof and reinforcing floor, $31,000.

BALTIMORE—Lord Baltimore Filling Stations, 3 service stations, $30,000.

BALTIMORE—H. Barry Cassell, building addition, $15,000.

BALTIMORE COUNTY—Raymond Schoolden, garage, $12,000.

BALTIMORE COUNTY — E. Tolden Kelbaugh, service station, $22,000.

BALTIMORE COUNTY — Glenn F. Gall Lumber Co., plant.

BROOKLYN—General Ref. Co., building, $27,460.

CUMBERLAND—Potomac Produce Corp., expansion.

CUMBERLAND—Tower Realty Co., broadcast station.

FREDERICK—Monocacy Broadcasting Co., broadcast station.

LAUREL—J. A. Ballenger, sales and service building.

PIKESVILLE—Consolidated Electric Light & Power Co., pumping station addition.

SALISBURY—Salisbury Cotton Mill, warehouse, $20,000.

SILVER SPRING — Montgomery F. M. Broadcast Corp., FM broadcast station.

TOWSON—Bendix Radio Division, Towson, television broadcast station.

MISSISSIPPI

CUMBERLAND—Chesapeake and Potomac Telephone Co., addition.

HATTIESBURG — Hub City Broadcasting Co., broadcast station.

JACKSON—Mississippi Power & Light Co., $4,500,000 station.

JACKSON — Lamar Life Insurance Co., broadcast station.

LUCEDALE — Districts Nos. 1 and 5 of George County, $140,000 factory.

MERIDIAN—Lix J. Fruge, $18,987, floor area.

PASCAGOULA—Wallace M. Quinn Fisheries Co., plant.

WEST POINT—Bob McRaney, Sr., broadcast station.

MISSOURI

CARTHAGE — Carthage Broadcasting Co., standard broadcast station.

FARMINGTON—Cecil W. Roberts, broadcast station.

FLAT RIVER—Oscar C. Hirsch, broadcast station.

KANSAS CITY—C. R. Bradshaw, building, $15,500.

KENNETT — Kennett Broadcasting Corp., FM broadcast station.

MEXICO — Audrain Broadcasting Corp., broadcast station.

SPRINGFIELD—St. Louis, San Francisco and Texas Railway Co., $5,000,000 expansion program.

SPRINGFIELD — Springfield-Newspapers, Inc., plant $20,000.

SAINTE GENEVIEVE — Donze Company, radio station.

ST. LOUIS — Globe Publishing Co., FM broadcast station.

ST. LOUIS—St. Louis University, television broadcast station.

ST. LOUIS — Star-Times Publishing Co., FM broadcast station.

ST. LOUIS — Pittsburgh Plate Glass Co., warehouse.

ST. LOUIS—White Castle System, Inc., addition warehouse, $10,000.

ST. LOUIS—Atlas Enameling Co., factory, $50,000.

ST. LOUIS — Southern Equipment Co., warehouse, $41,000.

ST. LOUIS—Hyde Park Breweries Association, addition to warehouse, $290,000.

ST. LOUIS — Anheuser-Busch, Inc., addition, power house, $450,000.

ST. LOUIS—Continental Can Co., factory, $450,000.

ST. LOUIS—Lueking Transfer Co., service station, $15,000.

ST. LOUIS—"B" Produce Co., shipping and picking building, $18,750.

ST. LOUIS—Yellow Transit Co., truck terminal, $325,000.

VANDALIA—Vandalia Shoe Factory Committee, plant, $122,000.

NORTH CAROLINA

ASHEBORO—William D. Kivott, shop, $17,500.

ASHEBORO — Asheboro Weaving Mill, plant, $150,000.

ASHEBORO—Asheboro Broadcasting Co., radio station.

BURLINGTON—Tower Hosiery Mills, addition, $110,000.

BUXTON—Cape Hatteras Electric Membership Corporation, $30,482 plant.

CHAPEL HILL — Johnson Furniture Co., building, $15,000.

CHARLOTTE—Edgecombe Steel Company, $210,000 plant.

CHARLOTTE—Charlotte News Publishing Co., station and change frequency.

CHARLOTTE — R. C. Motor Lines, terminal, $33,000.

CHARLOTTE—Station WSOC, FM station.

CHARLOTTE—Publix Broadcasting Service of Charlotte, Inc., standard broadcast station.

CHERRYVILLE—Carlton Yarn Mills, Inc., mill, $50,000.

DREXEL — Drexel Furniture Co., $151,200 warehouse.

DURHAM — Durham Radio Corporation, FM broadcast station.

FAYETTEVILLE—Wayne M. Nelson, Inc., broadcast station.

FAYETTEVILLE — Fayetteville Broadcasters, Inc., $40,888 radio station.

FORSYTH COUNTY — R. J. Reynolds Tobacco Co., warehouses, $226,560.

GASTONIA—Queen City Coach Co., bus station.

GOLDSBORO—Central Service Motor Co., garage, $22,500.

GREENSBORO—Guilford County Association, $55,866, building for the blind.

GREENSBORO—S & W Motor Truck Lines, garage and warehouse.

GREENSBORO—Southern Bell Telephone and Telegraph Co., addition, $300,000.

GREENSBORO — Burlington Mills Corp., $37,500 addition.

GREENSBORO—Proximity Manufacturing Co., office building, $35,000.

HICKORY — Duke Hosiery Corp., plant, $60,000.

HICKORY—Catawba Valley Broadcasting Co., Inc., FM broadcast station.

HICKORY—J. M. Rowe, Jr., $15,990 plant.

HIGH POINT — High Point Enterprise, broadcast station.

KANNAPOLIS—Fred H. Whitley, broadcasting station.

KINGS MOUNTAIN—Plonk Brothers and Co., building, $15,500.

LAUREL HILL—Morgan Cotton Mills, Inc., addition to building, $82,000.

LENOIR—John P. Rabb, station.

LENOIR—F. G. Hodges, $23,000 building.

LEXINGTON — Leonard and Tucker Machine shop, building, $11,000.

MARSHALL—French Broad Electric Membership Corp., REA Project.

MARSHVILLE — Carolina Asbestos Co., building and warehouse, $110,000.

MOORESVILLE—Cascale Rayon Mills, addition, $22,000.

MOORESVILLE—Mooresville Cotton Mills, air-conditioning systems.

MOREHEAD CITY — Max-Dix Asphalt Shingle Co., Inc., $146,900, warehouse and factory.

MORGANTON—J. E. Butler, laundry and dry-cleaning-plant.

NORTH WILKESBORO — Carolina-Northwest Broadcasting Station, broadcast station.

(Continued on page 140)

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Potomac Soundings

by LAWRENCE SULLIVAN

Progress in Atomic Energy

Despite important developments in other areas, Oak Ridge, Tenn., remains the atomic capital of the world, according to the second annual report of the U. S. Atomic Energy Commission, submitted to Congress on July 22.

Oak Ridge is the principal production source for uranium-235, the primary fissionable material, and likewise the center of the Commission's extensive research and training program. There, also, is the center of a vast experiment to apply atomic energy to the propulsion of aircraft, in cooperation with the Army Air Forces and the Fairchild Engine and Airplane Corporation.

"The Commission is giving vigorous support to fundamental research through its laboratories and through contracts with private institutions."

Principal research in atomic military weapons has been transferred to the new Las Alamos Laboratory, in New Mexico, where operations are under "severe security restrictions."

Twenty-nine universities are cooperating in the Argonne National Laboratory, Chicago, where considerable progress is reported in fundamental research in nuclear physics.

Through the Clinton Laboratories at Oak Ridge, graduate students from fourteen universities in the Southeastern quadrant of the United States are taking advanced courses in nuclear research. Institutions participating in this program are Alabama Poly, Catholic University, Washington; Duke, Emory, George Tech., L. S. U., Tulane, Vanderbilt, and the State universities of Alabama, Kentucky, North Carolina, Tennessee, Texas and Virginia.

Defense Measures

The first hint of defense measures against atomic attack is found in the admission that the Commission already has developed a new gas mask "for reducing the dangers of breathing air contaminated with radioactive materials."

One immediate project of the Commission is publication of a comprehensive 100-volume National Encyclopaedia of Nuclear Energy. About half the volumes will be restricted and the balance available for general circulation.

Lower costs are the first dividend of our vast atomic research program.

"The unit cost of one raw materials process has been decreased by approximately 75 per cent during the last four years. . . ."

Half-a-billion for Research

Since its first meeting on November 13, 1946, the Atomic Energy Commission has received net spending authorizations aggregating $604,000,000 through June 30, 1947, and has Congressional appropriations of $250,000,000 for the present fiscal year, plus authority to enter new contracts for an additional $250,000,000 before June 30, 1948. This means that we are currently spending a little more than half-a-billion annually on atomic research and development.

"During the brief period of its incumbency the Commission has pressed the production of fissionable materials and the improvement of atomic weapons as essential to the security of the country . . . our immediate national security demands that present operations continue without interruption. . . . We mean to maintain and increase the present preeminence of the United States in atomic weapons until such time as the Congress affirms that acceptable international agreements have been reached and the appropriate machinery has been established to insure that this activity can be relaxed without endangering the national security."

Application of atomic research to the field of medicine likewise has surpassed all expectations, the report continues.

"An important beginning has been made at exploiting peacetime uses of atomic energy. Radioisotopes, a most promising research tool in chemistry, biology, and medicine and of great promise in agriculture and metallurgy, are being produced and distributed in ever increasing quantity. Shipments to hospitals and other research institutions now exceed one hundred per month. Heavy hydrogen, another isotope of particularly great use in many kinds of research, is now being made available for the first time at low cost. Nuclear radiation services, too, are now being provided to qualified research agencies.

Industrial Use Possibilities

"Large scale production of power for industrial and community use continues to be a major, if long term, goal. The experimental reactors now being designed will provide much of the engineering data essential to such a power program. But a number of basic advances in physics, chemistry, and metallurgy will be required before power is produced at satisfactory efficiency and cost. The technical problems to be overcome are many, but we confidently expect them to be solved. It is speculative, at this stage of development, to estimate how long it will be until power production units feasible for large-scale commercial use will be available. Such power, when attained, will almost certainly supplement rather than supplant water power, and power derived from coal, oil, and gas."

The Clinton Laboratories at Oak Ridge are in regular production on 90 different kinds of radioisotopes, representing more than 60 elements ranging from antimony through zinc and zirconium. Now produced through the nuclear reactor, rather than the original cyclotron, these materials, of such vast importance in medicine, chemistry, metallurgy, and agriculture, are being sold in routine manner through the Commission's Isotopes Branch at Oak Ridge. The future of this development is hinted by the fact that "one millicurie of Carbon-14 now being sold for $50 would cost about $1,000 to produce by the cyclotron process."

An Audit of Social Security

For the first time in our twelve years' experiment with nationwise compulsory social security, the program is to be audited from an actuarial standpoint. The nation is to be informed accurately how much the social security program is in the red.

Heretofore, all public accounting in social security operations has been on a cash basis of income and outgo, without regard to the future obligations piling up against current receipts.

The actuarial audit has been authorized by the Senate Finance Committee during the Congressional recess, under a resolution supported by Chairman Millikin (R., Colorado) and Senator Walter F. George, of Georgia, ranking Democratic member.

Total collections of social security taxes from the beginning of the program in 1935 through June 30, 1947, were $13,515,781,043, and total expenditures (including railroad retirement payments) were $7,210,197,703. Adding investment income of $839-million to the unexpended tax receipts, the social security system now carries a trust fund of $8,798,014,946 against its future obligations under some 37,000,000 old age retirement "policies" and 50,000,000 unemployment insurance "contracts."

The questions to be answered by the

Potomac Soundings — *by Lawrence Sullivan*

Senate Committee's audit are: What are the total obligations of the social security system under existing contracts at maturity; and (2) what would be the net fiscal position of the system, on a normal life-expectancy basis, when all of today's contracts are discharged?

Some reputable insurance actuaries estimate, unofficially, that the deficit would run approximately $15-billions, assuming that all existing contracts will continue to bring in existing payroll taxes throughout their normal life expectancy.

If the audit confirms this astonishing conclusion, the result will be that social security, for 12 years, has piled up a federal deficit of $1,250,000,000 a year, over and above special tax collections, averaging a little more than $1-billion a year. In other words, social security to date has not been half paying for itself in the payroll taxes.

The social security taxes have been stabilized once more at one per cent each for employee and employer through the calendar years 1948 and 1949. In part, the actuarial deficit in the pension accounts arises from the fact that the original law contemplated a progressive increase in the payroll tax from one per cent to three per cent. Had that progression not been postponed by specific Congressional action every year, the 1947 actuarial audit surely would have offered a better showing.

Can Employes Afford the Tax?

Nevertheless, a vital question is presented for popular decision. Would the beneficiaries of the pension program want it at a self-sustaining price in payroll taxes? In every Congressional decision to postpone an increase in these special payroll taxes, the clinching argument has been that employees could not afford the higher tax rate under steadily advancing living costs since 1935.

Eventually Congress and the Administration must get together on the problem. If social security is an honest operation, it must be self-sustaining, else the whole program is subsidized from the general funds of the Treasury.

It is the duty of Congress to inform the nation how much social security actually costs, and then to test whether the taxpayers want it at that price.

The present system of concealed deficits is unfair to everyone paying social security taxes, since the system is not prepared to pay out over the long pull.

It is equally unfair to all other taxpayers, for they are being saddled with an unseen actuarial deficit which amounts to approximately $3 per month for every family in the U. S.

Who would guess that social security really costs $3 per month per family, over and above all present payroll taxes?

The Millikin-George audit comes as a distinct service to the nation.

Petroleum Shortage Spotty

With domestic demand for petroleum products running about 31 per cent above the prewar average and still seven per cent above the wartime peak, the industry will be hard put this month to meet all demands of the peak consuming season. President Truman may impose temporary export restrictions to protect domestic supplies. Gasoline supply will be irregular in some sections of the country, particularly in the Upper Mississippi Valley and the Pacific northwest.

The Senate Commerce Committee reports that there is ample crude petroleum in the U. S. to meet all possible demands, but that refining capacity and transportation facilities present a temporary bottleneck in distribution of finished products, particularly gasoline.

Current crude production runs about 5,110,000 barrels a day with demand running 5,733,000 barrels a day. Our refining capacity is limited at about 5,125,000 barrels a day.

The petroleum industry already is launched upon a $4-billion expansion program, which will give us a refining capacity of more than 6-million barrels daily. Exports of refined products take about eight per cent of our domestic production, but we are exporting about 42,000 barrels a day *less* than our total crude imports.

Labor Unions Must Register

A new division in the Department of Labor is responsible for the registration of all recognized labor organizations, as required under the new Labor Management Relations Act of 1947.

The Act specifies that the National Labor Relations Board shall not take action on questions involving representation, shop elections, or unfair labor practices by a labor union unless "such labor organization and any national or international labor organization of which such labor organization is an affiliate or constituent unit" shall have previously filed with the Secretary of Labor copies of its constitution and by-laws and a report "in such form as the Secretary may prescribe" showing the name of the organization and the address of its principal place of business; names, titles and compensation and allowances of the three principal officers and other officers or agents whose aggregate compensation and allowances for the preceding year exceeded $5,000.

The report also must show the manner in which officers and agents were selected; initiation fees charged new members; amount of regular dues, and detailed descriptions or reference to constitutional provisions which govern various union operating procedures.

In addition, unions filing NLRB cases must show that they have filed with the Secretary of Labor a financial report, list of receipts and their sources, total assets and liabilities at the end of its last fiscal year, and all disbursements. The union must also show that the financial report has been furnished to all members.

The law provides that all labor organizations shall file annual reports bringing up to date information required in the initial filing and shall send their members annual financial reports in the form and manner required by the law. Failure to do so precludes the union from being certified as bargaining representative by the NLRB and requires the Board to refuse to entertain petitions for elections or to issue complaints based on unfair labor practice charges filed by unions.

Labor Department officials estimate that there are more than 150 international unions and between 50,000 and 75,000 local unions in this country.

This new law also requires the Bureau of Labor Statistics to maintain a file of all collective bargaining agreements settling labor disputes, "for the guidance and information of interested representatives of employers, employees, and the general public."

The file of agreements shall be open to inspection under appropriate conditions prescribed by the Secretary of Labor, except that no specific information submitted in confidence shall be disclosed.

The Act also authorizes the Bureau of Labor Statistics to furnish on request of the new Federal Mediation and Concilitaion Service, or employers, employees or their representatives "all available data and factual information," except information submitted in confidence, which may aid in the settlement of labor disputes.

Heavy Exports Inflationary

President Truman's mid-year Economic Report highlights exports as a major problem in the American business equation over the coming year. During the first half of '47 U. S. exports were at the rate of $20.7-billions a year, compared with a rate of $15.3-billions during the last half of '46.

Not only does this terrific export demand run up prices all along the line at home, but the payments due to cover our export balances present an international financial problem of the first magnitude.

Our imports are currently running at about $7-billions a year, leaving almost $14-billions in exports to be financed by gifts, credits or payments. How long can this swollen tide of exports be sustained? Indeed, how can it be sustained without some orderly and nationally accepted policy governing international credits? Today there is no such integrated policy.

"The effect of these transactions upon the total flow of the Nation's income," the President's report concludes, "is roughly indicated by the fact that our increase in the annual rate of the net foreign balance constituted about three-fourths of the increase in the annual rate of total gross national product from the last quarter of '46 to the first half of '47."

In everyday language, this official summary means merely that we are now keeping ourselves on the inflation spiral only by scattered and disconnected loans,

(*Continued on page* 156)

LITTLE GRAINS OF SAND

"Little drops of water, little grains of sand,
Make the mighty ocean, and the pleasant land."

Development of the $30,000,000 newsprint mill at Childersburg, Ala., is especially important because it reveals that capital can be interested in newsprint production in the U. S. despite the flight of the industry to Canada in recent years and the conversion of many mills to other paper grades. It is also important because it indicates what newspaper publishers can accomplish in their own behalf if they have the will, and the confidence in their industry, as exemplified by members of the Southern Newspaper Publishers Association who now have successfully promoted two newsprint mills. What has been done at Lufkin and Childersburg by publisher groups, can be done elsewhere. Publishers in general owe a debt of gratitude to these groups who are promoting mills which will help the entire industry.

Total taxes estimated for the fiscal year 1948 will be about $36 billion. Thus in the third year after the end of the war, a tax load is proposed which is seven times the amount collected in 1940, and only $8¼ billion less than the highest amount we endured in any war year. It is more than 6 times the highest amount collected in any year of World War I, and ten times the tax level of 1922. This burden of taxation cannot continue without serious effects upon our economy. Taxation at this level does not merely lower the living standard of the nation. It discourages thrift and saving; it weakens the motives that lead men into business venture; it checks enterprise and slows down production; it retards economic progress and destroys the moral character and independence of the individual.

Government can no more raise the standard of living by gifts and subsidies than can liquor improve the physical health and vigor of the individual. The temporary stimulating effect is followed by a headache and, if persisted in, eventually by general debility.

Wage stabilization at prevailing levels would leave wage and salary earners with far more purchasing power, relatively as well as absolutely, than they had before the war. The national income was running at a rate of $167,000,000,000 in May, the latest month for which official estimates are available. Wage and salary payments were at an annual rate of over $113,000,000,000. These figures indicate an increase in the national income of 135 per cent since 1939, while wages and salaries have risen 157 per cent. In other words, wages and salaries currently exceed 67 per cent of the whole national income, while they were less than 62 per cent of the total in 1939.

Labor forces in America are estimated to be increasing at the rate of 600,000 annually. These must have jobs and machine tools, and capital must be available to provide them if the jobs are to be created. Instead of the $6,000 per worker of capital investment formerly required in the average manufacturing plant, it now takes much more because machine tool dollars buy far less today. There is only one place this needed capital can come from, the savings of the people and corporations of the country and the investment of those savings in an ever expanding industry. In other words, individual savings must be made possible by reducing taxes, and investment opportunities must be made attractive,—yes, you have guessed it—by a reduction in taxes.

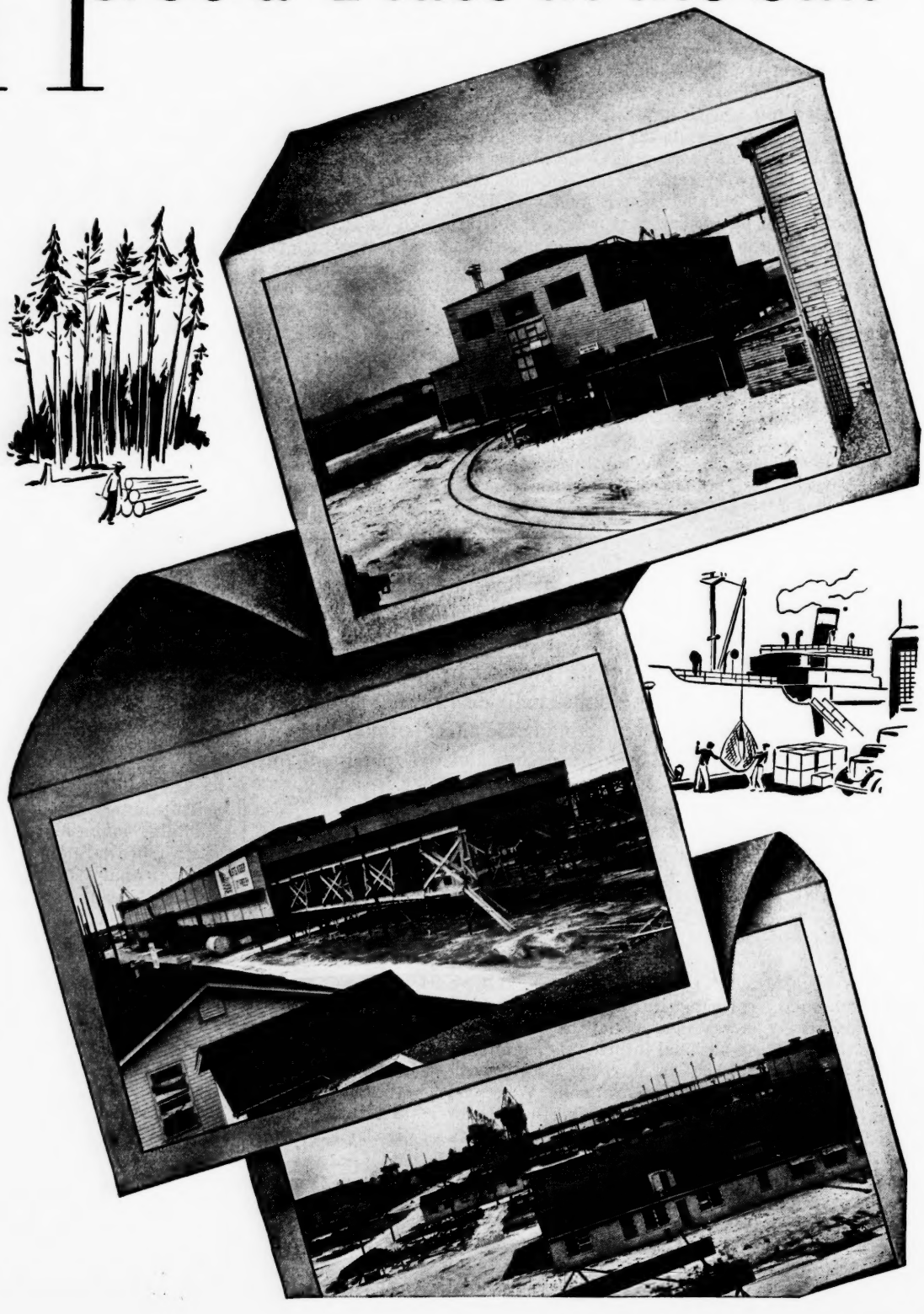
According to the CIO's monthly journal *The Economic Outlook*, "Pilot plants might be set up in certain industries to force prices down to reasonable levels; that is, more extensive use of the experience gained through TVA." But what is that experience? It is that an agency using government money under a fancy and fanciful hodge-podge of accounting practices can sell electric power at any price it chooses. Many of us will recall the quip that made the rounds some years ago to the effect that the Tennessee River flows through three states and drains the other forty-five.

The Building Products Institute states that the trend in building materials prices has been downward since early in May. "Analysis of the weekly wholesale price index of the Bureau of Labor Statistics shows that the upward movement in materials prices ended in mid-March of this year and has been levelling off since then with slight variations. The peak was reached in the week ending May 10 when the index stood at 178.6 per cent of the 1926 average. In the week ending July 12, the index was 175.4, a decline of about two per cent from the peak." It is interesting to compare this price index figure with the index of average hourly wages paid in plants manufacturing building materials and equipment which is about 220 per cent of the 1926 average.

There is more truth than humor in the saying that John L. Lewis is the best salesman the oil and gas interests have ever had; that he has done more for them than they have done for themselves in converting consumers from the use of coal to gas and oil. In 1929

(*Continued on page* 26)

Here's a "Place in the Sun"



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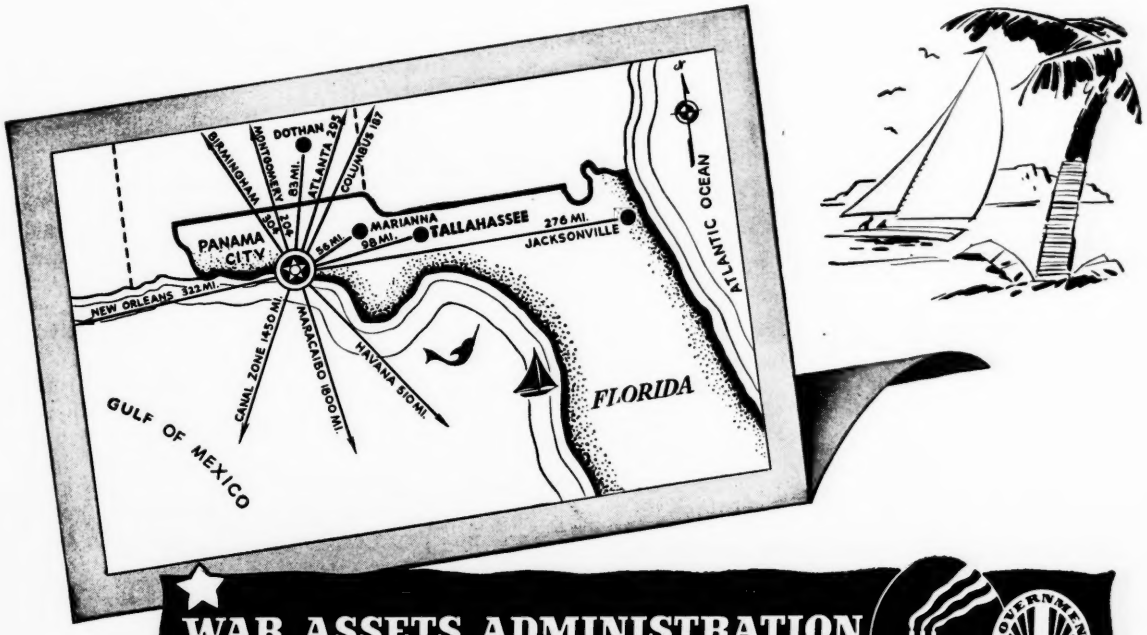
SEALED BIDS. Bids will be received on the Standard Bid Forms, which state the terms and conditions of this offer, available at the Jacksonville Regional Office.

The property is subject to the following priorities to purchase in this order: 1. Federal government agencies, 2. R.F.C. for qualified small business, 3. State and local governments. These priorities expire at 9:00 A.M., E.S.T., on August 25, 1947. No lump sum bids will be received from priority holders, but separate proposals for one or more of the segregated portions declared will be accepted.

Bids will be received on Standard Bid Forms from the general public on one or more of the segregated portions, subject to priority holders' exercise of their claims, until *9:00 A.M., E.S.T., on September 18, 1947*, at which time all proposals will be publicly opened and read at the Jacksonville, Florida, Regional Office of War Assets Administration. The right is reserved to reject any or all proposals.

Inspection of this offer can be arranged through the Jacksonville Regional Office or the custodian on the site.

Address your request for bid forms and all other inquiries to address below.



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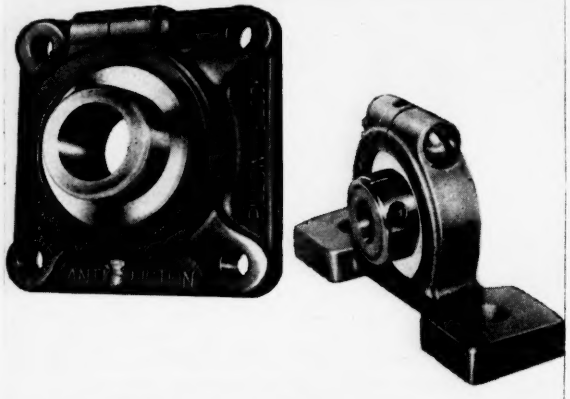

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★ **SELF-LOCKING DEVICE**—assures permanent stability of the ball bearing itself. Eliminates possibility of it becoming loose within the housing.

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(*Continued from page* 23)

bituminous coal supplied 52.8 per cent of the total energy from mineral fuels and water power, and natural gas only 7.7 per cent. By 1945, coal's share had declined to 42.2 per cent while that of gas has risen to 11.6 per cent.

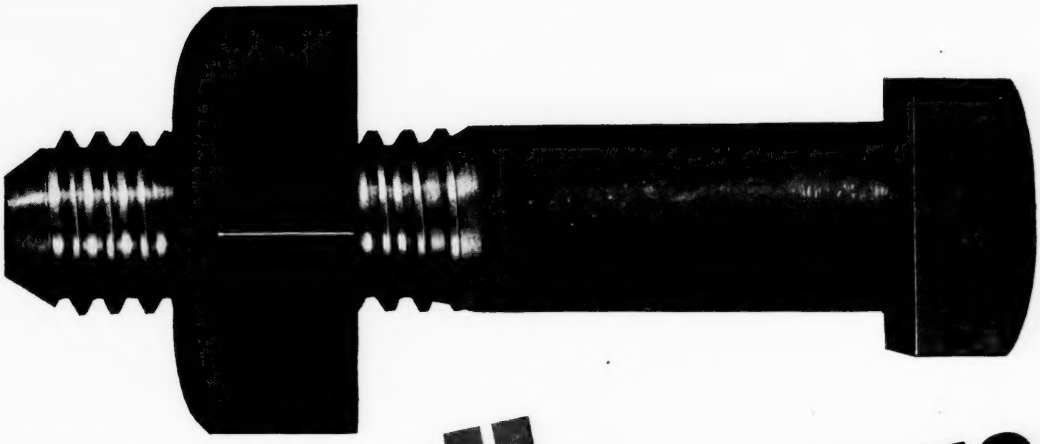
The senior senator from Maine, Owen Brewster has revived a proposal that merits nationwide consideration. It is embodied in a bill to make former presidents of the republic senators-at-large. As such they would be entitled to all senatorial prerogative except the right to vote on legislation. The theory inspiring the proposal is that the experience a man acquires in the White House would qualify him to make valuable contributions to the national welfare and to public thinking. As elder statesmen, such eminent citizens could increase their capacity for public service if permitted to aid in the senate's deliberations.

Statistics of the Department of Labor clearly show that industrial relations are conducted in America under a wide diversity of arrangements. Despite the strenuous efforts of labor unions aided and abetted by Government agencies, a majority of employes still bargain individually with their employers. Many millions of employes get along satisfactorily with their employers without the formality of a written collective bargaining agreement—other millions want no such agreement. This certainly gives the lie to the statement that unionization and collective bargaining are "inevitable" or that they are becoming "universal," as is so often contended in labor circles.

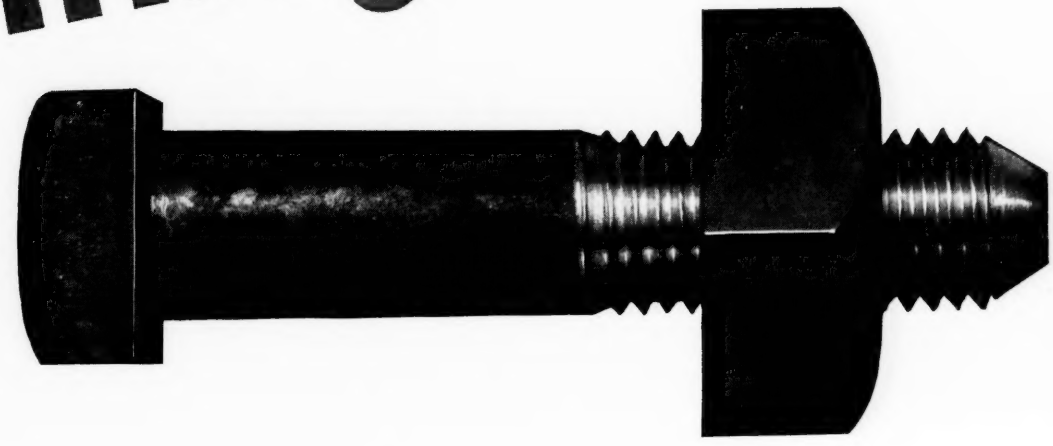
It is the official opinion of the Consumer Bankers Association that regulation of consumer credit by Federal authority is unnecessary, ineffective, un-American, unsocial, inconsistent, and impractical. Certainly in peacetime, it is an unnecessary regimentation of the personal affairs of the individual citizens of this country. From the banker's point of view, it is unnecessary because no banker in his right mind is going to permit unsound or unreasonable terms, either directly to the purchaser or in discounting dealer paper, or even so indirectly as through the finance companies whose paper the larger banks purchase. In short there is no evidence to indicate that such regulation is necessary from the point of view of either the banker or the citizens of this country as a whole.

Two years after the war business is still running strong at peak levels. An explanation for this is to be found in the vast backlog of unfilled demand in automobiles, building, capital goods. The slack in certain consumer lines is being taken up by expanding activity in equipment. This expansion has benefited by improvement in supplies, fewer strikes, dropping of federal controls and record-breaking exports. Building is the latest industry to feel the stimulating effect of freedom from federal control. It is undeniable that the prophets of recession have misjudged the sustaining business force of the expanding capital goods industries.

(*Continued on page* 30)



Fitting-Up BOLTS



Bethlehem fitting-up bolts for the steel construction industry are made in three types—70,000 lb, 90,000 lb, and 125,000 lb minimum tensile strength. They come with American Standard Regular Square Heads, Plain Necks, Semi-Cone Points, and with either American National Coarse or 60 deg Acme Threads.

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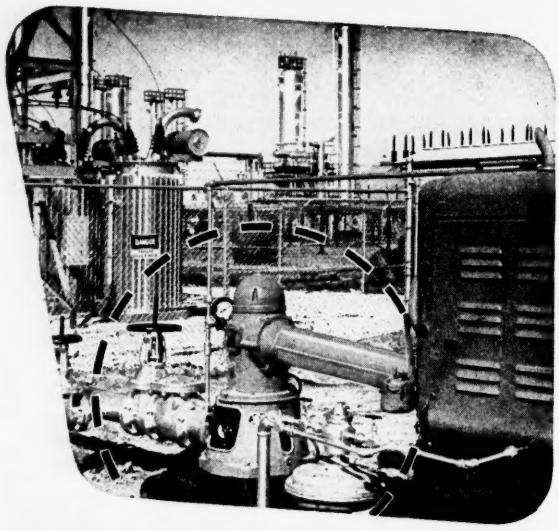

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(*Continued from page* 26)

Maintenance of current high levels of business activity, plus anticipated bumper crops yet to be harvested and moved, are expected to result in a freight car shortage later this summer that will be more serious than any yet experienced. There are 24,000 fewer freight cars in operation today than at the beginning of 1946 and this reduction in rolling stock comes at a time when unprecedented peacetime demands are being made on transportation systems. Currently, freight traffic is running well ahead of 1946.

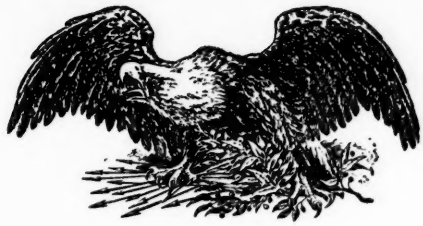
Production of domestic freight cars reached a 5-year high in June with construction and delivery of 5,514 units, compared with 3,929 in May. Of these 4,217 were constructed in shops of the railway car builders and 1,297 in railroad shops. These figures reflect a substantially improved flow of steel and other materials to the car shops. But in spite of June deliveries the backlog of domestic freight cars on order and undelivered was 107,476 as of July 1.

Proponents of a Missouri Valley Authority have seized upon this year's floods as a propaganda peg on which to hang a new campaign for a regional authority. They attempt to compare the Missouri Valley with the Tennessee Valley, completely overlooking the facts that the former is six times larger than the Tennessee and that the TVA has scant interest in navigation, irrigation and flood control. Chattanooga is still subject to disastrous floods, and it was the chief sufferer before TVA. The mountain valleys in Tennessee are narrow and the waters swift. The terrain is ideal for power dams, and these are what the TVA has built, tax free.

August 14 of this year is the twelfth anniversary of the signing of the Social Security Act. Starting from nothing and without precedent for guidance, the Social Security Administration has grown to be one of the most far flung of the Government institutions. The importance of its administration is obvious when a few statistics furnished by the Agency are considered. More than 75,000,000 persons hold social security account numbers. Each quarter year, over 47,000,000 workers receive wage credits towards establishing entitlement to social insurance protection in their old-age or income for their families in the event of death of the wage earner. Most recent statistics compiled as of the end of March, 1947, showed that at the time 1,738,841 men, women and children were receiving monthly benefits amounting to $33,099,100.

The short cotton crop which has been forecast for 1947, together with a continuation of the high prices in fabrics that are made from this staple agricultural product of the South, again has raised the question of how long the cotton farmer can enjoy prosperity.

There would seem to be a much brighter outlook for the long range future of the cotton crop in scientific research than there is in any outright farm subsidization program which could ever be devised.



"What Enriches the South Enriches the Nation"

APPEASEMENT

Coal is unquestionably one of the most important single commodities, if not the most important in our complex economy. Without it wheat, corn or meat could not be processed or distributed and our cities, great and small, would stagnate and their citizens starve. Living conditions for those fortunate enough to survive would revert to the days before Watt invented the steam engine. Even oil, its great competitor, is in no position as yet—and we doubt if it ever will be—to replace coal. Oil can be made from coal and there is an abundance of unmined coal. We are undeniably living in an Age of Coal.

If we admit, as we must, that an unceasing supply of coal is as essential to the health of our civilization as is the blood in our arteries to our personal lives, then it becomes downright silly for us to continue to tolerate the absolute control of coal in the hands of one man even though he be endowed with a Machiavellian brain, a bull of Bashan voice and glower, and a penchant for Shakespearean tragedy.

Shades of John D. Rockefeller! As a monopolist he was a piker compared to John L. Lewis. But it is not fair to condemn Mr. Lewis nor to be aroused to wrath by his annual antics. His power conceivably might be in the hands of a Petrillo, a Harry Bridges, or even an Al Capone. Mr. Lewis is financially honest and he does love his dwindling family of miners. He admits it. Why should he worry about America? Didn't its government make his power possible and doesn't it still condone it? Is it strange for him to "pay no mind" to suckers?

Let us turn for a moment from the dictator of the mines to the coal operators, men who, in the past, have stood between the rapacity of Mr. Lewis and the public that he would rape, men whose long run interest in keeping the price of coal low is identical with the interest of coal consumers—and, if you eat, that means you. Except for the independent operators of the Southern mines, the coal industry, led by the giant Steel corporation and the largest consolidation of operating mines, ignominiously capitulated. These two largest operators knifed the industry in the back and left it helpless to do anything but cave in. Even the Southerners had no alternative to acquiescence save business suicide.

We, the people, have just witnessed this economic Munich on the domestic front. The respected leader of our greatest steel corporation has already forgotten the ultimate price paid there for appeasement. He has completely ignored the historic fact that Chamberlain returned to England with "peace for our time," and he attempts to gull the American public with the self-same slogan when he points with pride to a contract—for one year only. Will we witness an economic duplication of the invasion of Poland next July 1st?

Mr. Fairless and his Pittsburgh Charlie McCarthy should have at least earned the gratitude of the Washington administration. They have postponed a showdown with monopolist labor for at least a year and, with further appeasement tactics, may succeed in postponing it until after next year's election. They deserve a reward. Judged by the precedent set by his illustrious predecessor, an appointment to the Court of St. James would be in order for Mr. Fairless, and Mr. Humphrey should at least be presented with a wooden handled umbrella.

It is neither fun, nor is it funny, to stand idly by while our pockets are being picked because our friends deserted us. But it really is ironical when we think that we are responsible for today's bullies who were the objects of our pity not so many years ago, the underprivileged for whom we all felt so sorry that we made them into monopolists.

Why Stop Halfway?

A striking enigma presents itself in the discrepancy between textile production in the South and its backward next of kin, the apparel industry.

In the textile industry there has been a strong upward trend from the very beginning that not only surpassed most other Southern industries in rate of growth, but at the same time was surprisingly steady and continuous.

It would be logical to expect that the next step in the fabrication of fibers for consumer use would travel along with equal swiftness in company with a development so closely related to it.

In the case of a few products this has happened. In the production of such items as sheets, towels, and other allied commodities falling within the household accessory group, but included officially in the apparel family, there has been phenomenal growth in the South—greater relatively speaking than in other sections of the country.

Not so, however, with tailored clothing, or garments in general. The last census from which little change has occurred up to now showed that the South had an unchallenged majority of textile mills, but only 150 factories making men's and boy's clothing out of a total of 1,300 for the country; only about 20 establishments making neckwear out of a total of over 300; less than 10 plants making women's blouses out of nearly 200; only 90 dressmaking establishments out of 1,400; only 50 factories turning women's coats and suits out of a 1,100 national total. The record shows that the South, on the one hand, has long been fabricating the lion's share of the cloth and materials that go into these articles, but has been buying from other regions a substantial share, far more than it has been making, of the finished articles.

Thoughtful consideration of this situation cannot but bring brows together in wonder that such an anomaly could exist in a region that has made such phenomenal industrial strides in so many directions.

There can be no reason assigned here, as possibly in other cases, that special skill is lacking. For both managerial and productive purposes the South is known to enjoy the best in apparel-making ability. Nor can the puzzle be solved on the oft-mentioned premise of dearth of capital. Textile plants, as an almost universal rule, cost much more in capital investment than is necessary to set up apparel factories.

The greatest likelihood is that the opportunity here involved has just been overlooked in the multitude of opportunities presented by a fast growing region. This probability is fortified by accomplishments made in the very few Southern states that have taken apparel manufacturing seriously. This can especially be said of Missouri which is fast developing a fashion center of its own so far as women's wear is concerned, and in similar manner of Texas which has made considerable progress in recent years. The same is true of Mississippi which is directing aggressive action toward building up an apparel industry.

None of these states, however, nor any of their sisters have yet awakened sufficiently to the fact that men really need pants—and a few less necessary appurtenances to go with them.

Profit opportunities in the apparel industry are practically commensurate with those in the textile field—value added by manufacture in the first amounting to approximately 42 per cent against 46 per cent in textiles.

As a whole the nation turns out almost as much, dollarwise, in apparel as it turns out in textiles. The puzzle is: Why does the South turn out three-fourths of the textiles and less than 15 per cent of the finished apparel?

What The South Is Making

Letters constantly being received by the MANUFACTURERS RECORD contain an ever-growing stream of evidence of new enterprises started in the South and of the growth of established companies which are converting local resources into end-use products. It is well to call attention to some of these products and their producers. In many instances these letters tell a story of Southern enterprise using Southern resources and making Southern products for use or consumption by Southerners, products formerly made elsewhere *from Southern materials.*

While the dollar value of industrial production in the South has long since passed its income from agriculture, the South is still thought of by many, even some within its own borders, as predominately a farming region. Nor should the importance of the role of agriculture in the Southern economy be minimized. It not only furnishes increasing food supplies but it is a major contributor of basic materials to many of the fast developing manufacturing industries that are expanding everywhere in the South.

In this issue of the MANUFACTURERS RECORD alone can be seen some of the notable examples of the products and activities to which Southern manufacturers are devoting their interests (see particularly items in "New Products and Methods" page 82).

Among these new products are a new kind of piston ring and a tire plug that stops leaks; an indexing device that permanently secures cards which never need be shifted in order to secure alphabetical sequence; a pineapple syrup made from fresh pineapple and with crushed pineapple in the syrup and a new orange syrup made from Florida oranges. This is in contrast to the day when the out-size orange or grapefruit which did not fit packing crate requirements were thrown into the rivers to flow down into

the Atlantic or Gulf as waste. A new motor-driven label gummer is a machine designed for companies which have no need for large-type labeling equipment. It may, in fact, be used with a large machine to put on a secondary or subsidiary label, or a tax stamp.

Then there is a new manufacturing plant at New Orleans which is claimed to be the only manufacturing plant in that area supplying the adhesive needs of New Orleans and the South. Its products include canners glues, case and carton sealing glues, and a variety of other gums and pastes. This company says "we have gambled our future on this development," and from the way they write we believe it a safe gamble.

And so the list goes on. A window fan with scientifically designed blades having a silent cleaving action on the air, moves large air volumes quietly and economically.

A new Solenoid Diffuser that gets rid of flying insects by merely flicking a switch; an important development in the making of cotton rugs with a deep pile; a Southern paint company develops pigmented semi-transparent sealer for concrete, while keeping moisture out it permits sufficient breathing to allow the escape of moisture; a new type of furnace black for the reinforcement of natural rubber and a variety of other uses.

Truly, the story of Southern creative enterprise makes stimulating reading.

Precept And Performance

We have just addressed a very personal question to a caller. We asked him what his income tax was and he said it was $500 a year.

We then asked this caller how many tons of coal he used each year. He said eight.

So if the price of his coal should go up by $1 a ton, his added cost of living would be $8 for the year. President Truman is very eager that the coal operators should not take this $8 from the man and in a statement Monday expressed such hope.

On the same day, President Truman again let it be known that he would veto the tax bill which is to come to him from Congress. The tax bill would reduce our caller's income tax by $100 a year.

It is very bad to charge people higher prices; that is inflation. But it seems there is an exception. The higher price of government is deflation.

Along with his plea to coal operators, Mr. Truman said he hoped that steel men would not raise prices. The price of steel is about 33 per cent above its pre-war figures. Lately the steel men have raised the wages of their own employees by a sizable amount without raising their prices. Now their coal is to cost more but again they are put under pressure not to raise prices.

The cost of government is already several hundred per cent above pre-war. But the very people who are managing government and who in the main are resisting any cuts in the price of government are now advising the steel men and the coal men that they must not increase their prices.

And see how the law of supply and demand is working. People want more steel and things made of steel and they want all the coal that can be mined. But there is no doubt in the world that they want less government.

—Wall Street Journal

The Gwinn Investigation

Determined to disclose racketeering and monopoly by some labor unions, Representative Gwinn's Subcommittee of the House Labor Committee will hold hearings in September in New York, Chicago and West Coast cities. Concerned not only with restrictive practices, the Committee will investigate charges that the unions are "determined by various methods to force all home construction into the hands of the Federal government."

Pulling no punches, Congressman Gwinn has said: "The unions are beginning to clamor for more Federal housing because the government is the only one able to pay the exorbitant prices since it can pass the costs along to the taxpayers. Unwittingly, these unions are joining forces with the collectivists in a move to get more public housing, the greatest avenue there is to collectivist society. Government housing means political party control of those who occupy the housing and in other countries it always has led to allocation of space under a one-party system."

Notable Railroad Merger.

The consolidation of the Gulf, Mobile and Ohio Railroad and the Chicago and Alton is a merger of advantage to both territories previously served separately by these roads.

Under the competent management of I. B. Tigrett, of Jackson, Tennessee, its president, the Gulf, Mobile and Ohio was developed from a small road less than 50 miles in length, to a trunk line extending from Mobile to St. Louis. With the acquisition of the Chicago and Alton, known for many years as one of the successful railroads of the country, there is now an integrated system of almost 3,000 miles of track reaching from Mobile to Chicago.

Undoubtedly a new vista is before the Southern territory to which Mr. Tigrett has devoted his life, and it may be taken for granted that under his guidance the work to be carried on will be in good hands.

Isaac Burton Tigrett is a man of simple tastes and habits with an abiding faith in an over-ruling Providence, and his constant purpose is that of furthering the well-being of the men his company employs. Their loyalty and affection for him are outstanding.

Southern Business Outlook

Starting with this issue, this page of MANUFACTURERS RECORD will be devoted to a current summary of Southern industrial conditions.

As a prelude to present and future consideration, it is useful to take a look at the background. From this standpoint, the South can indulge in reasonable cheer. Recognized by most statistical agencies before the war as the section most likely to show growth beyond the average rate for the nation, the 16 Southern states have been consistently fulfilling that promise, and, from current indications, may be expected to continue to do so in the years ahead.

Manufacturing production, as a whole for all Southern states, currently is running at the annual rate of over $31 billion. This compares with $11.2 billion in 1939. Current production value includes price inflation of 74 per cent. In 1939 dollars, manufacturing output for 1947, if maintained at present rates, would aggregate $18 billion.

Approximately the same relative increase of postwar over prewar activity prevails in other departments of the economy. The South appears to be riding along on a pretty well balanced scale. The current summary follows:

MONTHLY INDUSTRIAL PRODUCTION

	Latest Month	*Preceding Month*	*Year Ago*
All Manufacturing	$2,643,574,000	$2,668,782,700	$1,969,143,300
Durable Goods	$957,025,400	$958,803,100	$679,802,300
Nondurables	$1,686,549,300	$1,709,979,600	$1,289,341,000
Steel Output (tons)	1,175,100	1,115,276	658,056
Pig Iron Output (tons)	792,550	769,715	443,828
Cotton Consumed (bales)	739,134	748,441	776,772
Cotton Spindles (in thousands of hours)	8,230,112	8,461,747	7,900,908
Pine Lumber Output (board feet)	64,547,000	68,924,000	59,112,000
Electric Power Output (in thousands of kilowatt hours)	7,054,844	6,858,155	6,107,252

CONSTRUCTION AWARDS—FARMS AND MINERALS

Farm Cash Income	$405,397,000	$608,780,000	$601,460,000
Meat Slaughter (head)	1,176,400	984,600	769,800
Crude Oil Output (barrels)	99,055,000	101,918,000	95,700,000

DISTRIBUTION

Net New Business Establishments (number)	2,283	2,319	2,296
Bank Deposits	$7,863,000,000	$7,763,000,000	$7,319,000,000
Bank Clearings	$6,285,936,000	$6,624,601,000	$5,402,333,000
Carloadings	937,100	1,167,700	1,264,500

Manufacturing output compiled from state and federal statistics; steel and iron compiled from reports of American Iron & Steel Institute; Cotton data from Department of Commerce; Pine lumber from reports of Southern Pine Association; meat slaughter from U. S. Department of Agriculture; electric power from reports of Federal Power Commission; farm cash income, U. S. Department of Agriculture; coal, Bureau of Mines; crude oil, from reports of American Petroleum Institute; net new business, from Dun & Bradstreet reports; bank clearings and deposits, Federal Reserve Bulletin; retail sales, Department of Commerce and Federal Reserve System reports; freight movement (includes incoming and outgoing) Interstate Commerce Commission records.

MANUFACTURING EMPLOYMENT BY STATES

	Latest Month	*Preceding Month*	*Year Ago*
Alabama	224,400	224,000	201,300
Arkansas	67,900	67,600	68,500
Florida	76,600	81,900	77,900
Georgia	251,100	253,900	243,500
Kentucky	126,900	130,400	121,000
Louisiana	136,600	135,200	132,900
Maryland	229,000	231,000	224,000
Mississippi	89,100	90,400	81,400
Missouri	345,600	349,600	312,400
North Carolina	372,100	375,400	358,500
Oklahoma	53,000	54,100	51,700
South Carolina	187,100	189,600	178,400
Tennessee	247,700	249,200	232,100
Texas	324,800	325,900	299,700
Virginia	209,400	209,100	193,500
West Virginia	132,600	135,400	128,700
South	3,073,000	3,102,700	2,905,500

The Southeast

By JOHN MEBANE

Department store sales in the Sixth Federal Reserve District during the first half of this year surpassed the dollar volume of such sales during the first half of last year "probably" by 7%, the Federal Reserve Bank of Atlanta reports. The bank adds in its Monthly Review that even if sales for the rest of the year fall somewhat below the levels for the last half of 1946, the dollar volume of them for the full year will be equal to that record-breaking volume for the 1946 calendar year.

Although consumers probably spent more during the first half of this year than last, they received less for their money, the bank asserts. This was due chiefly to rising prices and the fact that buyers purchased different types of merchandise. Between April, 1946, and April, 1947, prices of goods bought in the sixth district rose an average of 20%. There is a falling off in the purchase of luxury items and textiles but a sharp gain in the purchase of durable goods.

Because of this change in the trend of buying (and there is a similar trend over the nation) and because manufacturing output in this area is chiefly nondurable goods, the bank warns that "these shifts may challenge the managerial ability of the area more than they will that of other regions."

Asserting that some new firms in the district have reported marketing difficulties which have curtailed or shut down their operations, the bank adds: "This condition is not necessarily a sign of decreasing general business activity but may merely be one of a return to the rigors of the free-enterprise system in which rewards go to the firms that can meet high efficiency standards."

Reflecting increased industrial activity is the fact that electric utilities in the sixth district during the first half of this year met the heaviest demand for power on record, the bank reports. In February, daily average power production was 7% above the war peak. The bank economists explain that in this way:

"The major increases in the volume use of power have come from the industrial growth during the war, especially in those industries which are heavy users of power, such as the chemical and metallurgical industries. Moreover, fuller wartime fabrication of district products required more power-using machinery. Industrial power use, which accounts for about two-thirds of the total power output, as a result almost doubled in the six states during the war."

The bank adds that rising incomes also have been a cause of increased power production. Many families have bought electrical appliances and farm electrification has been increasing.

"There is little reason to believe that the growth in power use in the district has reached its peak," the bank's Monthly Review asserts.

Charles T. Taylor, economist at the bank, writes in the Monthly Review that retailers are expected to return to their prewar scale of borrowing from commercial banks, seeking the short-term, self-liquidating type of credit.

He also reports that installment accounts are increasing and that recent price boosts indicate an expanding use of credit in the future by individuals.

Lifting of building controls is seen certain as stimulating industrial and commercial construction in this area.

Franklin Simon, for example, which operates the oldest specialty shops on Fifth Avenue in New York, has just announced it would establish its second largest store in Atlanta. A new four-story building will be financed for that company by the Life Insurance Company of Georgia, at a cost of about $1,500,000. Franklin Simon will lease the building, which is expected to be ready for occupancy in the fall of 1948.

R. Howard Dobbs, first vice president of the Life Insurance Company of Georgia, said this financing reverses the traditional trend of Eastern concerns establishing operations in the South turning to Eastern sources for financing. He said it reflected the increasing ability of Southern capital to finance ventures in the South.

Rich's, Inc., largest department store south of Philadelphia, also has just opened its huge, new basement store, which covers two city blocks and contains approximately four acres of floor space. This is the first step in a $5,000,000 expansion program for that establishment.

Jacobs Pharmacy Company, Inc., Atlanta, has disclosed that it is starting on an expansion and improvement program which ultimately will represent an expenditure in excess of $500,000. The company plans to add 10 new stores to its present chain of 14.

During the three-month period ended June 30, the War Assets Administration sold 161 war plants and other major installations in the Southeast. These installations represented an initial cost to the government of $187,484,144. Among those sold were shipyards, ordnance plants, miscellaneous industrial establishments and Army and Navy camps.

These properties are now being put to important uses in the states of Georgia, Alabama, Florida, Tennessee and North and South Carolina.

The big J. A. Jones Shipyard at Brunswick, Ga., has been sold to the Brunswick Port Authority, and plans are being made to utilize this property for commercial and industrial sites. The Savannah (Ga.) Port Authority is acquiring the Southeastern Shipyard at Savannah for similar purposes.

The Aluminum Ore Company at Mobile, Ala., originally built to reclaim aluminum from low-grade bauxite, has been sold to Ideal Cement Company which will process 1,000,000 barrels of Portland cement annually, using oyster shells instead of limestone.

Gadsden (Ala.) Ordnance plant has been sold to Allis-Chalmers, of Milwaukee, which plans operations there to afford employment to about 2,500 persons with an annual payroll of $6,125,000. Camp Croft at Spartanburg, S. C., has been sold to the Spartanburg Foundation which is using the property for industrial, commercial and residential purposes.

These are only a few of the uses to which war installations are being put in the region, but they indicate a good deal of beneficial use is being made of plants which many had feared might prove "white elephants" after the war.

Birmingham District

By R. W. KINCEY

Birmingham industry has gone into the third quarter with well filled order books. It faces a similar fourth quarter situation and has brought prospects of continued high production well into 1948.

That is on the basis of current business. Prospective bookings are numerous. The district is worried more about raw materials and uninterrupted production than it is about business—at least for the moment.

Expansion and diversification continues on a moderate but regular program.

The month has registered several significant mileposts.

It saw the giant $30,000,000 Childersburg paper mill (Coosa River Newsprint) move a step nearer actuality with announcement that Kimberly-Clark Corporation, Neenah, Wis., has entered into a tentative agreement to operate the project.

It saw the wartime facility of Southern Detinning Company in North Birmingham pass to the American Rockwool Company, Chicago, which will manufacture insulation rockwool from Alabama slag.

The Chicago concern will spend some $150,000 to rehabilitate the detinning plant. It expects to be in produc-

(Continued on next page)

tion by April in the $1,233,000 government facility. It is a new payroll for the district.

It saw announcement from Pullman-Standard Car Manufacturing Company that production of its new P-S-1 freight car will be made a part of the company's program at Bessemer to insure steady production and additional payrolls.

It saw a bequeath of $40,000 from the late Mrs. Alva M. Middlemiss to aid the fast developing program of the Southern Research Institute in behalf of new products and expanded markets in this section of the South.

Indicative of the increasing complexity of the economic situation, Southern and national, came a $3.50 increase in the price of pig iron. Although rather expected, the price boost came as something of an additional shock to industry, especially in view of the continuing scarcity of that material.

Quick to follow suit was scrap iron and steel. Getting completely out of hand and with the market highly demoralized, prices this week jumped from $1.50 to $3.50 a ton. Anticipation of still further increases keeps scrap relatively scarce; hampers industrial operations to that extent.

But production figures increase, notwithstanding. The state's output of coal for the first half of the year was 8,676,000 tons. For the same period last year it was 7,080,000 tons. Red ore output for the same period was 3,307,985 and 2,504,832 tons for 1947 and 1946, respectively.

Carbuilding, which will feature the new composite type car at Bessemer, will continue at least into the year on present bookings with nearly 10,000 units now on order. Other business is in sight.

Steel mills are reticent to discuss specific orders. But a survey shows no slowing down is in sight as far as demand for steel is concerned.

It is indicated, therefore, that the spectacular rate of 99 per cent with 23 open hearth furnaces active, will continue indefinitely. Big bookings are known to be on hand in cast iron pipe and by the various foundries of the district.

Employment figures are spotty and subject to almost any kind of juggling. Unemployment has increased for the past month even though employment increased not less than 750 in the immediate district. Entrance of youth into the labor market is the answer. But the trend, in several major categories, is upward.

Of more than passing interest was a ruling by a three man circuit judge panel that T.C.I. miners displaced by the general steel strike last year were entitled to unemployment compensation.

The state's Department of Industrial Relations ruled at the time that T.C.I. comprised a single integrated plant and that the 3,500 miners could not be paid.

The Alabama Board of Appeals held the miners were entitled to the compensation. This ruling was appealed and the three man panel was named to hear the case. Another appeal is likely, but the district and industry generally is watching the case with interest.

Considerable anxiety is being manifested in business and industrial circles over the recent coal wage boost. Warren Whitney, vice-president of James B. Clow & Sons, and manager of National Cast Iron Pipe Company here, is afraid of what it will do to construction and expansion plans, some of which already have been shelved. Similar misgivings are heard on numerous sides.

As to Alabama's coal industry, the prospects admittedly are bleak. Higher mining costs, thinner seams, greater washer loss and steady encroachment from competitive fuels already have seriously hurt the market. I. W. Rouzer, president of the Alabama Mining Institute, said:

"A good many miners stand to lose their jobs, some operators their investments."

But local business men and industrialists just back from the 28th annual session of the Southern Conference in Human Relations in Industry, in Blue Ridge, N. C., feel the situation can be met. They believe the necessary mutual understanding and cooperation between management and labor can be attained.

And there is general agreement, even in some labor union quarters, that increased productivity is the only reliable answer to the problem of rising costs. The doctrine is being preached with some degree of effectiveness, it is hoped and believed, in this district.

The immediate district will take a big spurt in construction in the closing months of the year.

Predominant is a program conservatively estimated at $12,000,000 for apartments that will provide housing for 1,628 families within the next 12 months. Several of the smaller projects will be completed within six months.

The district's various engineering and industrial organizations have currently active programs and are planning big Fall and Winter seasons.

Heading the Traffic and Transportation Club as president succeeding the late Arthur J. Ribe, is John Sanford, traffic manager, Chicago Bridge & Iron Company.

Appointed assistant director of Southern Research Institute is Dr. William M. Murray, Jr., acting head of the engineering division. Dr. Murray is succeeded by Dr. C. R. Freberg.

Announcement is made also of the retirement of William M. Rogers as president of Birmingham Electric Company. He is succeeded by Charles T. Thorn, vice president and general manager. Mr. Rogers becomes chairman of the board.

The Engineers Club of Birmingham has selected John W. Hager as its new president, with Joe R. Hill, vice president; C. P. Shook, Jr., secretary-treasurer, and Mrs. Lucile M. Cunniff, executive secretary.

Piedmont Area

By J. A. DALY

An apparently assured farm income from 1947 harvests at least equal to that from 1946 yields is a major factor in the steadily brightening medium-term prospect for manufacturers and distributors in the Southeast.

Harvests are attaining seasonally high volumes at a time when latest reports show that industrial employment in the Carolinas has undergone little change in recent months.

Lately, strongly upsurging cotton prices inspired an abrupt, large-volume forward buying of cotton textile products, mostly at moderately strengthened prices.

Toward the close of July, Carolina business and industry seemingly fully shared revived inflationary expectations.

An intensive survey of changes in economic factors of the Carolinas during the rather turbulent month of July failed to disclose deterioration in any major sector.

Furthermore, current conditions and medium term prospects actually improved appreciably for several outstanding elements of the area's manufacturing industry. Among these, in addition to textiles, were furniture, construction, canning and machinery.

Manufacturers' prices mostly were steady to strong as August drew near. Textiles prices were leading the uprise. Furniture prices were holding around war-time levels but qualities were described as greatly improved. A slight downward tendency, with increasing supplies, was reported for construction materials' prices.

Foodstuffs processors complained of unsatisfactory profit margins, reflecting consumer resistance to continuing high prices, while supplies were increasing.

Heavy industry price structures were essentially unchanged and supported by insistent demand.

Representative merchants reported that prices at retail were stabilizing after several months of downtrend while qualities generally were being bettered. Aggressive merchandising was sustaining retail volumes slightly above

levels of a year ago on a dollar basis.

First publicized effect in the Carolinas of the newly enacted Federal Labor Law was the CIO's calling off of the Gaffney Mfg. Co. strike, which began at Gaffney, S. C., in September, 1945, over the "check-off" affecting 750 employees.

The American Federation of Labor began at Asheville a test of North Carolina's newly enacted labor law which bans the closed shop, "check-off" and other labor practices.

Portents of further diversification of business and industry were given in the North Carolina Government's announcement that the 2,375 charters granted to new corporations in the fiscal year ended June 30 represented an all-time record. Total authorized capital of these concerns was given as $240,418,825. South Carolina's new incorporations for the same period numbered 1,006, which was 184 greater than the preceding fiscal year's total.

Statisticians reported that 132 new concerns, including several small manufacturers, were established in Charlotte in the first half of 1947. The Chamber of Commerce bemoaned a complete lack of unoccupied housing, storerooms, offices and industrial structures.

Showing the direction of the economic "wind" are the following bank clearings data for Charlotte:

Week Ended	*1947*	*1946*
July 17	$69,558,670	$62,073,500
July 10	60,748,506	56,187,969
July 2	68,819,462	60,426,356
June 25	70,785,466	63,946,284
June 18	76,908,521	67,908,144
June 11	57,691,053	53,309,539

Electric companies reported power production in the Southeast is holding 7 to 10 per cent above this period in 1946.

Seasonal resumption of community canning of fruits, berries and vegetables lately has increased Carolina employment by several thousand persons.

A moderate increase in North Carolina claims for unemployment compensation was regarded as incidental to mid-Summer while official reports showed industrial jobs still totaled 5,000 above the state's war-time peak.

In view of the "apparent crisis" in cotton, managements may be interested in the statistical background of this American crop, because of its world-wide economic importance.

The Government's July 8 estimate that plantings totaled 21,389,000 acres inspired a "bull" move that added as much as $17.00 per bale to cotton futures before resistance developed on the New York market ten days later. This acreage is 3,128,000 under the ten-year average. With average abandonment, 20,989,000 acres will be harvested this year, compared with 17,615,000 acres last year.

The new-crop yield prospect, based on 250 pounds of lint per acre, as the trade also figured, is 10,495,000 bales. The 1946 crop was 8,640,000 bales when the carryover from previous crops was 7,500,000 bales. The Aug. 1, 1947, carryover is estimated at 3,000,000 bales, indicating a disappearance of 13,140,000 bales, including 10,000,000 of American consumption.

Needs for domestic consumption and exports from this year's crop were estimated by the Government at 12,360,000 bales. The indicated supply from the 1947 crop and carryover will be around 13,495,000 bales. Thus, it is figured in the Charlotte cotton trade that the prospective carryover on Aug. 1, next year, will be around 1,135,000 bales—an acute shortage.

This newly developed economic situation worked quickly to benefit cotton textiles. The now optimistic industry mostly has sold its print cloth production well into next year, a factor bolstering sheetings demand. Inquiries for twills are expanding rapidly. Demand for bags is reflected in improved trade in osnaburgs.

Finished textiles are higher and in a strengthened market position. Converters don't like fine gray goods prices but weavers and sellers point to high and increasing costs as justification.

Cotton yarns are experiencing an irregular, moderate improvement but, lacking confidence, major consuming industries late in July continued hand-to-mouth buying. Spinners were keenly concerned over relatively large inventories. Expansion in demand for knit underwear tended to strengthen some sales yarn prices.

This improvement spread to the hosiery industry, where prices were stabilized and production continued high.

The average bid for a list of 60 Southern textile mill stocks continued its slow, steady movement into new high ground for the year throughout July.

Like the textile industry, North Carolina's highly important furniture manufacturing industry became lively late in July. The exposition at High Point, which ended early in August, was conservatively regarded as entirely successful from viewpoints of manufacturers and retailers. New designs of North Carolina furniture manufacturers also sold rapidly at the recent Chicago show. Medium priced lines are in limited supply and most manufacturers are allotting shipments of new designs to top-priority customers.

All reports from the furniture people said that demand was better than expected for bedroom, diningroom and livingroom furniture. All manufacturers are emphasizing that consumers are getting at about unchanged prices far greater values than were available in wartime production.

The Department of Commerce reported that North Carolina's furniture industry shipped products worth more than $40,000,000 in the last quarter of 1946 out of the national total of $380,000,000.

In July some stimulus was given to Carolina economy by about $5,000,000 of new highway construction contracts.

Reflecting the unrest in the construction industry, directors of the Carolina Lumber and Building Supply Association, meeting in Asheville, adopted a resolution condemning all interests suspected of taking advantage of "short supply to obtain excessive profit." The board also called upon all this association's members to "resist the costs of building."

This association's headquarters at Charlotte reported that supplies of better quality dry lumber are increasing and dealers are buying conservatively from liberal offerings of yellow pine, common grades. Finish grades and shop stock still are scarce and prices are unchanged. Lumber production seems to be exceeding shipments and increasing mill inventories point to more favorable prices by Autumn. Prospects also are better for late Summer relief from miscellaneous materials scarcities over the Carolinas.

As was true of the berry crop, demand within the peach belt has attained large proportions. Unrationed sugar available for canning is a factor in this boom of income for the agriculturalists.

North Carolina's peach crop is estimated at 3,100,000 bushels, slightly under the 1946 crop but 57 per cent above the ten-year average yield. Late in July prices in North Carolina, and in South Carolina, where the crop also was large, ranged mostly from $2.00 to $2.50 per bushel, No. 1's, 2 inches and up, FOB. South Carolina's peach crop is officially estimated at 6,942,000 bushels. Current average market prices indicate that these two states' peach yields will add $22,000,000 to farm income.

Agricultural authorities also estimated that several millions of new dollars were added to Carolina circulation through marketing of watermelons at record high prices.

Tobacco Associates, Inc., was organized in North Carolina to promote exports. Gov. R. G. Cherry of North Carolina urged the Carolina growers to assess themselves ten cents per tobacco acre to support this corporation. The Governor asserted that tobacco is facing an export "crisis," as 1946 exports of flue-cured tobacco represented 40 per cent of the production valued at $455,000,000 in the entire belt. Soon thereafter the tobacco growers in a referendum over the

(*Continued on next page*)

two Carolinas voted this assessment, estimated to total $90,000.

Continued high prices for somewhat less than normal supplies of livestock, poultry, eggs and dairy products are contributing substantially to the Carolina area's encouraging economic outlook.

Manufacturers of wheat flour and mill feeds have found themselves troubled by record, or near-record, prices for grains. Mill feed prices now are about $10.00 per ton above the highs of the early Post-OPA Period last Fall. Carolina grain crops this season were good.

Commercial fertilizer manufacturers are forecasting a slight increase in essential chemicals early next year. However, shortages are expected to trouble the farmers next Spring and Summer. Prospective increases are 3 per cent in nitrogen, 10 per cent in phosphoric acid and 5 per cent in potash.

Indicative of expansion in the automotive trade, Standard Oil Co. of N. J. opened an enlarged "school" at Charlotte to train service station operators and salesmen of appliances.

The Southwest

By DAN F. SUMMERS

Carloads of coal from the Southeastern Oklahoma mines and from other rich deposits in Arkansas began arriving in July at the Lone Star Steel Company plant in Daingerfield, Texas.

An estimated 3,200 tons daily were being accumulated for opening of the 1,200-ton blast furnace in August for production of pig iron at the East Texas plant. About 200 employees were brought into the plant early in July for initial operations in opening the works. The plant is equipped with a battery of seventy-eight by-product ovens. Additional employees will arrive when the main plant is geared for output.

Significant with opening of the Daingerfield plant was the July dedication of the $3,000,000 Gregg County airport covering 821 acres with its three mile-long runways. Houston smiled at this first big airport for the oil-timber-tomato rich East Texas region in that it expects to gain a percentage of the business that normally goes to nearby Dallas.

Crowning the structures on the field is the $200,000 administration building which was designed by Tom Broad, architect who also styled the smart administration building at Love Field in Dallas.

Opening of the field also marked the inaugural flight of Mid-Continent Air Lines, which will fly a Houston, Longview, Tulsa, Kansas City and Minneapolis route.

Houston snapped its suspenders in July when bank transactions rose for the first time over the $4,000,000,000 mark. Both clearings and debits established new highs the first six months of the year with clearings scoring $4,029,100,641 and debits rising to $4,514,053,385. P. P. Butler, president of the First National Bank and the Houston Clearing House Association, said the increase was noted in almost every line of business from wholesalers and retailers to distributors and big oil producers.

Reed Roller Bit Company, Houston, made highest bid of $451,699 for the government constructed plant there which Reed used during the war for production of tank transmission parts. Southern Warehouse Corporation seconded the bid with $335,100.

The plant, consisting of thirty buildings on fifty-two acres now used by Reed for the manufacture of pneumatic tools, was built by the government at a cost of $2,674,000 and occupies 664,000 square feet of floor space. Most of the tools in the plant are those Reed moved to Houston when it purchased the Cleveland Pneumatic Tools.

While Reed's bid will await government action, Eastern States Petroleum Company has already had its bid of $2,000,000 accepted for the government-built high octane refinery unit at Houston. The plant construction cost the government $10,351,000. It is presently operated by Eastern States under lease with the Reconstruction Finance Corporation.

The government stipulates that $400,000 must be expended during the next two years at the plant but R. B. Khale, president of Eastern States, said, on notice of the government's acceptance, that "considerably more than $400,000 will be spent in modernizing the property and installing machinery for manufacture of products required in the chemical industry." He said the expansion work would start immediately.

Camellia Creameries, Houston, has completed what it considers the first completely modern equipped ice-cream plant in the South. Construction of the concrete and masonry plant cost $500,000. Annual capacity of the new plant will be 750,000 gallons, Earle North, president, announced. . . . A. D. Lee, president of Lee Construction Company which builds crates for shipment of various articles out of the Port of Houston, is currently building a $25,000 plant to handle its expanding business. The firm crates and covers with protective coatings any kind of shipment from ditching machines, airplanes, and automobiles to its recent shipment of a complete hydrochloric acid plant to South America.

Contractors and architects left no small foot print in the July news around Dallas. Plans were being drawn or foundations started for new office buildings. The builders boasted most of all their ideas of smart, modern architecture and explained how it would distinguish their plans.

Promised by December, 1948, is the aluminum office building of twenty-one stories contracted for $3,000,000 by an unannounced Eastern life insurance firm. Hal C. Dyer, general contractor at Dallas who will supervise the construction, said the structure, to be known as the Fisher Building, will consist of aluminum facing on structural steel.

The use of aluminum facing, according to Walter W. Cook & Associates, Dallas architects and engineers, will save time in construction, insures lighter weight and provides an improved insulation.

The foundation work is almost completed on the $1,800,000 Monroe Building Corporation's office structure which was originally designed for eight stories and has been changed to eleven stories. Revamping of the original plans has caused some delay but work was resumed in July.

When completed in about ten months, the building will be viewed from the exterior with face brick separating the floors and marble between the windows set in aluminum frames. T. C. Bateson Construction Company is contractor and Ahlschlager & McCammon, designers of the $4,500,000 Mercantile National Bank Building at Dallas and the $13,000,000 Netherland-Plaza Hotel in Cincinnati, are the architects employed by P. D. Lindsey, president of Monroe Building Corporation.

Work on the ground floor and basements to the twenty-story structure being constructed almost in the heart of downtown Dallas by Central Industries, Inc., is continuing. The corporation, headed by E. V. McCright, is investing $2,000,000 in the office building.

One of the most advanced buildings in design but which is still only on paper is the hotel to be financed by Rogers Lacy, wealthy East Texas oilman. Famed architect, Lloyd Wright, has designed the hotel which will be most forward in its structural glass siding. Construction will be delayed several years until material costs are lowered.

Outside the downtown area of Dallas and in an area of most promising industrial development east of the municipal airport, the Coca Cola interests have revealed the site for a new $1,500,000 bottling plant which will double produc-

(*Continued on page* 132)

The Naval Stores Situation

by

J. A. Daly

CRITICAL years that hold a threat of practical extinction appear ahead for the Southeast's once romantic naval stores industry.

Interest compelling economically, this prospect's social implications also are highly important to the peculiarly situated "turpentine belt."

Time yet is available for efforts to conserve or expand this industry. Persistent interest in its preservation—admittedly a fight against long odds—is shown by the Federal Government and by the State Governments of Georgia, Florida and Alabama. These progressive activities are vigorous "last stands."

Nevertheless, it now appears that steady deterioration through future years will be this industry's experience in the inexorable competition with chemical laboratory products.

One of the original American industries, naval stores are reminders of the days of sailing ships and the maritime needs for pitch and tar. Through the years pine trees have been disappearing slowly, accelerating the decline of naval stores prestige in the Southeast. Some data indicate that this production in the United States in 1946 was valued at about $40,000,000—not so much in a nation accustomed to astronomical numbers.

With the replacement of the sailing vessels, an accompanying dwindling of demand for rosin and turpentine further weakened the economic position of naval stores. Therefore, any sporadic show of interest in enlivening the industry was dampened by the hard facts of high costs, unavoidable rather primitive production methods and changes in the fundamental economy.

Competition presented by the upsurging chemical industries and by some substitute natural materials also was a prime factor for naval stores' slow retreat through many years into their present—and probably last—stronghold in Georgia, Florida and Alabama.

A survey of the present status and outlook for naval stores has just been completed for the MANUFACTURERS RECORD. Officials of State Governments' conservation offices and affected industrialists were consulted.

All of them along the arc of the Southeast's seaboard states pointed with pride to the booming and dominating lumbering and pulpwood producing industries. Therein is profit from processing of pine trees—and methods are modernized. On the other hand, the idea was expressed that in exclusive naval stores production there's just too much work for the money.

Research in recent years has resulted in processes whereby 15 per cent of all turpentine and 25 per cent of all rosin is recovered from tree stumps. Furthermore, other research has enabled the wood pulp industry to recover substantial quantities of naval stores from pine pulping liquors. And, good results have been reported in chemical stimulation of gum outpouring from standing trees.

However, it is true that the rapidly expanding pulpwood industry is becoming an influential factor in naval stores. Furthermore, great paint and varnish producers and other industries, like Glidden and Newport Industries and the Lead Industries Association, are vitally concerned with naval stores production and maintain large operations.

Though an ingredient of usually minor quantity in finished products, naval stores, particularly turpentine and rosin, are considered "bottleneck" essentials for scores of products. These range from pharmaceuticals to varnish, soaps, disinfectants, phonograph records, paper products and synthetic rubber.

The American naval stores industry came into existence in 1665 when colonists began working North Carolina's "inexhaustible" primal pine forests. By 1800, Wilmington, N. C., was the greatest naval stores trade center.

Depletion of long-leaf pine forests forced the industry southward. By 1880, South Carolina surpassed North Carolina in naval stores output. Georgia went into top place ten years later, only to lose this position to Florida in 1904. Georgia regained the lead in 1923 and subsequently has held it.

North Carolina, birthplace of this industry, now is out of this picture.

Robert W. Shaw, assistant forester, North Carolina Department of Conservation and Development, is thinking of a statewide investigation to find out what, if anything, is being, or can be, done to revive the industry in that state.

"It is questionable whether you will find many foresters who would admit that it should come back," he said.

Mr. Shaw also commented: "The general opinion is that it could be revived and under good forestry management without reducing the quality of the trees for lumber and other uses."

It is clearly understood that the primary consideration related to North Carolina's vast expanses of coastal plain pine forests is lumber and woodpulp.

As for the South Carolina viewpoint, George W. Pettigrew, utilization specialist, State Commission of Forestry, says bluntly: "It seems evident that in South Carolina the turpentine industry is fading out of the picture."

Furthermore, "there is no definite program for re-development" of this industry in South Carolina, Mr. Pettigrew reported.

In the dwindling of naval stores production, just a few South Carolina operators have survived. Rhodes Brothers, at Walterboro, represent probably the state's last redoubt in this industry's continuing retreat southward.

By way of sharp contrast, enthusiasm regarding the industry's outstanding position in Georgia is expressed by Betty Burress of the Industry Panel, Georgia Industrial and Development Board. This enthusiasm appears well founded on statistics.

In the 1946 crop year, Georgia produced 74 per cent of the United States' gum turpentine output, 167,500 barrels of 50 gallons each. This is described as about one-third of the world's supply. Yet, in terms of money, this record is beclouded—Georgia's production was valued at only about $25,000,000.

Before going into interesting details of Georgia's operations, here's the picture for Florida, which produced in 1946 about 18 per cent of the nation's output.

"In Florida the turpentine industry ranks third in the income from forest production," says George B. Williams, naval stores co-operative agent, Florida Board of Forestry and Parks.

"In 1946 Florida produced 57,800 units of turpentine with a payroll value of $3,853,200 income for labor and $7,644,050 income for final products," Mr. Williams explained.

A turpentine unit is a trade term meaning 1,380 pounds of rosin and 50 gallons of turpentine. Usually 4½ barrels, 50 gallons each, of raw gum will produce a unit. One thousand pine trees, 10 inches in diameter 4½ feet above ground, one production face each, should produce 22 barrels, each 435 pounds net, per year. In their six-year producing life, the 1,000 trees will exude 120 barrels of gum.

From Alabama come comments on some other highly consequential aspects of this industry. Alabama attained a peak of naval stores production in 1908 at 10 per cent of the nation's supply. Recovery from a decline gave Alabama 1936 production of 10.6 per cent of the American total.

In the past crop year, however, this state's production was only 14,000 barrels of gum turpentine and 39,000 barrels of gum rosin, equal to 5.6 per cent of the United States output.

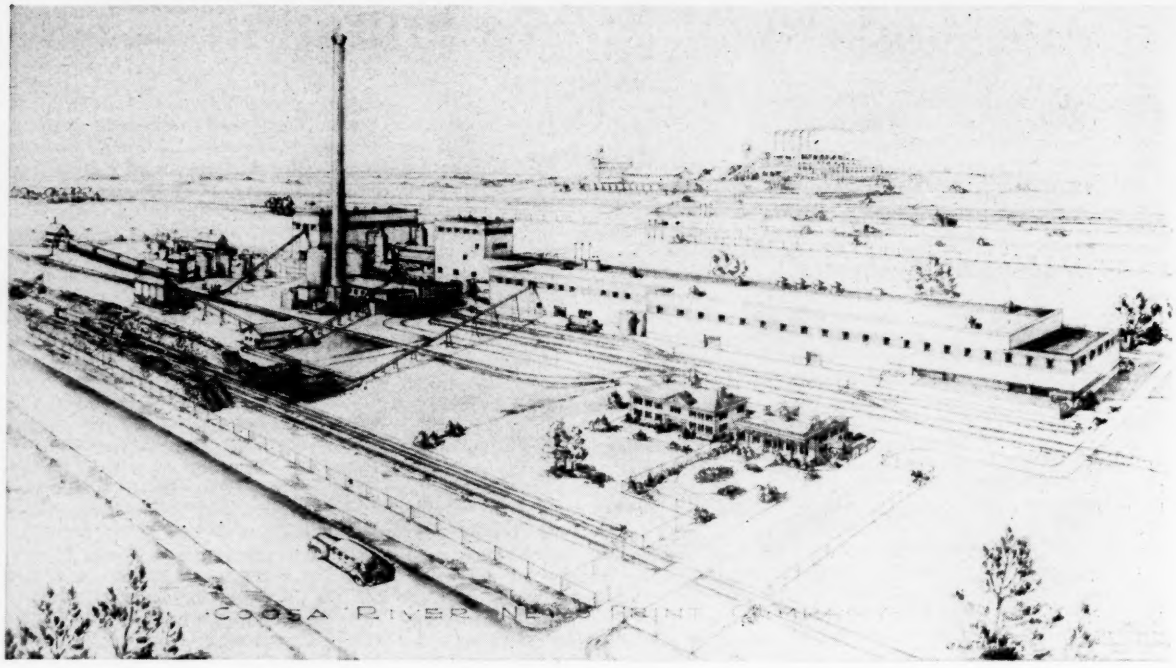
These data were provided by J. E. Moreno, director, Agricultural Division, Alabama State Chamber of Commerce, Montgomery, and by W. S. Stover, forest economist, U. S. Forestry Service, Southern Forest Experiment Station, New Orleans, La.

Revealing the long-continued realization of the vital relationship of Alabama's forests to the state's welfare, the Southern Forest Experiment Station commented in 1938:

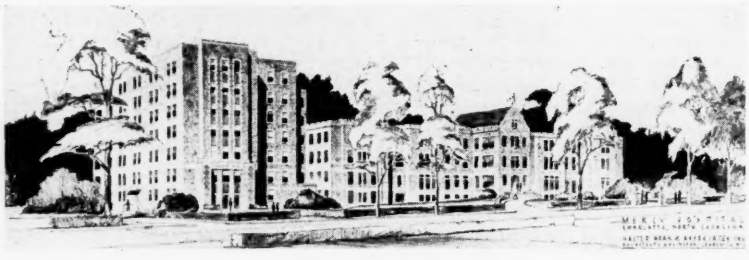
"The security and prosperity of these industries (several hundred miscellaneous plants, including naval stores, listed), of a very large proportion of the working people of the territory, and of the railroads, the Port of Mobile, ship and barge lines, and other transportation facilities, depend in large measure upon the continued prosperity of the forests.

"Furthermore, the local Governments, both state and county, must look to the

(*Continued on page* 142)

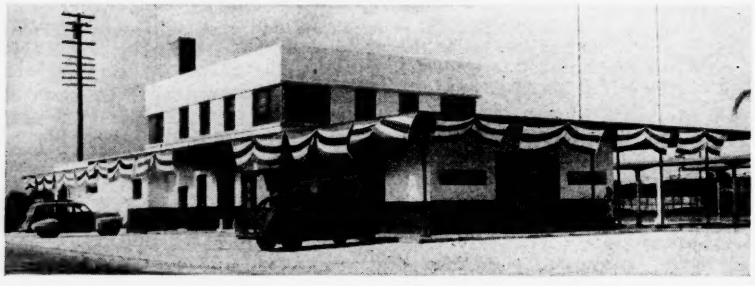


Above—$30,000,000 pulp and paper plant proposed at Childersburg, Ala., by Coosa River Newsprint Company, which last month concluded negotiations with Kimberly-Clark Corporation, of Neenah, Wisc., for management of the plant. Plans call for a two-machine mill with a rated daily capacity of 350 tons of newsprint and 200 tons of bleached sulphate. J. E. Sirrine & Company, of Greenville, S. C., are the engineers. The plant will be the South's second. A large newsprint operation is now operating at Lufkin, Texas, and a third is reported to be proposed for Leesville, La.



Above—Proposed Building for Mercy Hospital, Charlotte, N. C., where $1,500,000 is being spent for expansion. Walter W. Hook & Associates, of Charlotte, are the architects.

Below—New passenger and freight station built at Wildwood, Fla., by the Seaboard Air Line Railroad. Freight yard facilities have been rearranged to separate the freight yard from passenger tracks to eliminate interference between the two services. The station facilities include two train sheds. Passenger facilities include modern diesel fuel oil and water units. W. D. Simpson is Seaboard chief engineer; George D. Auchter Co., contractor.



Southern Contracts during July valued at $166,320,000

SOUTHERN construction contracts, as reported in the *Daily Construction Bulletin* of the MANUFACTURERS RECORD, were valued at $166,320,000 in July, the total ranking third among those for the elapsed months of the year.

Southern contract valuations so far this year amount to $1,033,801,000, a figure that has been surpassed during peacetime in similar periods of only two years—those immediately preceding and following the recently closed worldwide conflict.

The current July figure embraces $46,444,000 for highway and bridge contracts, $43,310,000 for private building, $31,816,000 for public building, $23,080,000 for industrial construction and $21,670,000 for heavy engineering projects.

Heading the list of the various types of construction, the highway contract valuation is the highest in almost a year and a half. The last month when contracts in the highway field were larger was in April, 1946, with its total of $51,871,000.

Private building, the second most important group in the current July grand total for Southern construction, represents a drop from both the figure for the preceding month and for the comparable

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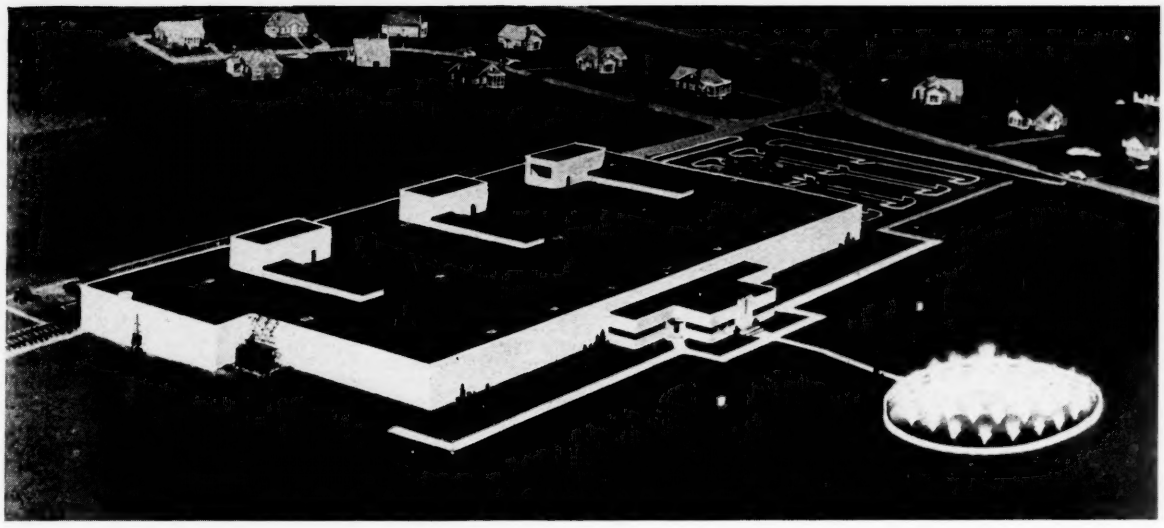
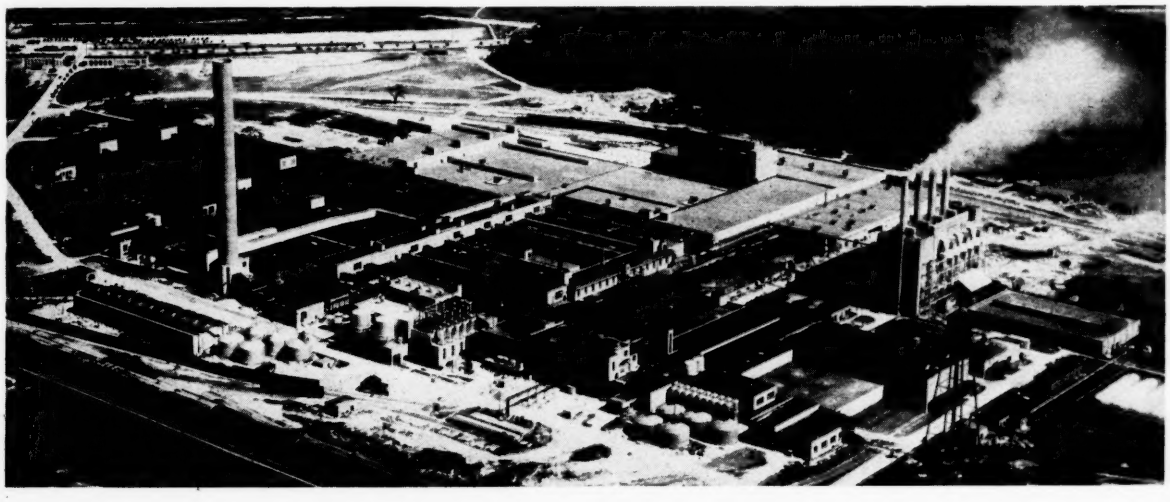
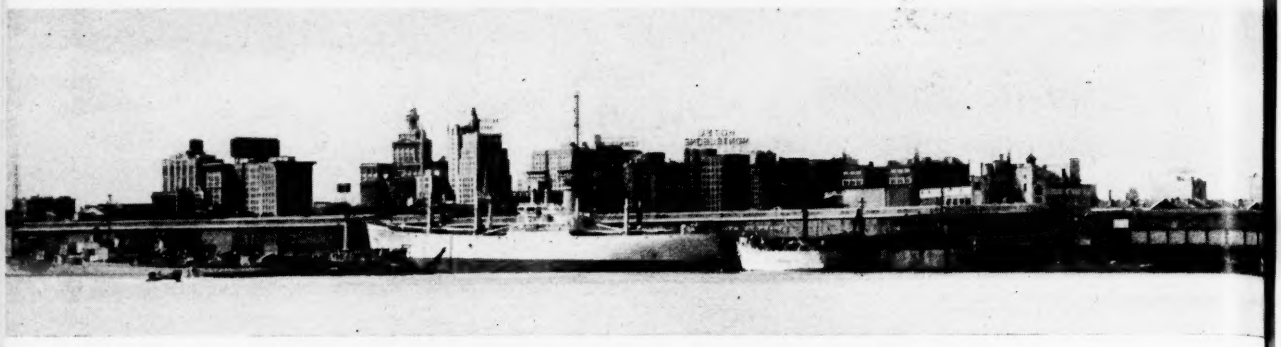


Above—Deering-Milliken spinning mill built at a cost of $1,000,000 at McCormick, S. C. Daniel Construction Co., of Greenville, was the contractor.

Right—Hotel Cordell Hull being erected at Gallatin, Tenn., by a corporation headed by W. H. Hitchcock, president of the First and People's National Bank. The structure will be of reinforced concrete. Donald W. Southgate, of Nashville, is the architect. Boone Contracting Co., also of Nashville, the contractor. Otis Elevator Co. is installing the elevator. The inside stairway is fireproof and enclosed. An outside fire escape of the stairway type is part of the design.

Below—Aerial view of American Viscose Corporation's plant at Front Royal, Va., where rayon tire yarn production was tripled and rayon staple output was increased 50 per cent by additions covering 10 acres and modernization of processes just completed at a cost of $30,000,000. Rust Engineering Co., of Pittsburgh, Pa., designed and constructed the mill buildings and rebuilt the rayon staple spinning machines. The plant is reported to be the world's largest.





Above—Ships, wharves and warehouses against the New Orleans Skyline.

New Orleans—Gateway to the Nation's Heart

As American manufacturers look to the ever-expanding markets of the post-war world, they are becoming increasingly aware that New Orleans is a natural world-trade gateway from the industrial heart of the nation.

Located on the Mississippi River 110 miles above its deltaic mouth, New Orleans is the terminus of nine railway trunk lines, the traffic center of 15,000 miles of navigable inland waterways extending from the Alleghenies to the Rockies and north to the Canadian border—and New Orleans is the nation's first port, according to U. S. Government statistics, in low-cost efficiency of services and facilities.

Today this strategic port offers a valuable combination of commercial opportunities to North American industry: proximity to a Latin American market worth four billion dollars in purchasing power; fast, regular steamship service to every major port in the world; leasable waterfront industrial sites combined with low-cost labor and abundant natural resources.

Extending along the riverfront and the Inner Harbor Navigation Canal, are 11½ miles of quay type wharves covered with modern steel and concrete sheds. The city's public belt railroad, 125 miles of interport track, carry exports directly to the waterfront for shipside loading. Modern, mechanized equipment, floating cranes and belt conveyors, pallet-board handling of small cargo greatly facilitate and speed the movement of goods.

But New Orleans does not rely alone on these assets which have raised her to second place in the nation's export and coastal freight traffic. To assume her new position as trade center of the western hemisphere, the port's Board of Commissioners has outlined a thirteen million dollar budget for new projects and improvements.

These include a freight airport for foreign commerce at an estimated cost of $1,525,000; recon-

Left—New Orleans Inner Harbor, showing the Navigation Canal.

Above—Loading Flour at New Orleans.

struction of present wharves at $3,561,000; new roadways and approaches to the wharves at $450,000; new wharf construction at $4,800,000; dredging at $850,000; and a bulk commodity handling plant at $1,100,000. The proposed freight airport will occupy a site along the port's Inner Harbor Canal, where its commerce will connect with ocean-going shipside facilities. Extensive dredging has already been started in the Canal where the immediate aim is the building up of lowlands to provide greater areas for industrial development.

A $700,000 program for installations in the new Foreign Trade Zone Number 2 is currently underway. Located entirely within New Orleans city limits, the zone enjoys all the advantages of other sections of the port, except that duty-free goods must remain within the Zone's confines. In Foreign Trade Zone operations American manufacturers will find new markets for a variety of goods. Assembling plants will combine foreign products with domestic products, (Swiss watch parts in American cases, Cuban liquors in American bottles,) to say nothing of the enormous amount of American packaging and labeling materials which will be utilized.

Of particular interest to importing manufacturers is the "freeport" character of the Foreign Trade Zone. Importers may examine raw materials and reject inferior goods before their entry duty is paid. Buyers may sample merchandise before making definite contracts. These activities and all zone operations are carried on with complete freedom from duty payment and the usual customs entry delays. Only when the goods enter the hinterland must the duty be paid.

New Orleans' Inner Harbor Navigation Canal, better known as the "Industrial Canal," has embarked on a program of expansion which will offer waterfront facilities to industries of many types. A five and a half mile deep-water channel connecting the Mississippi with Lake Ponchartrain (an arm of the Gulf of Mexico,) this canal is bordered on each bank by 1000 feet of state owned property which is available to private companies for industrial development. Sites are leased for $300 to $800 per acre annually. Public belt railroad tracks extend throughout the area. Now under construction is a 23-inch high pressure gas pipe line which will serve canal industries requiring large quantities of natural gas fuel.

Industries on the canal have the

Above—Stevedores place bananas on the conveyor which hoists them from the ship's hold to the warehouse.

advantage of proximity to both quay and slip type wharves where they may carry on their own dock operations. Among the larger plants which will be under construction during 1947 are the MacMillan Petroleum Corporation and the Williams Boat Works. Federal Barge Lines, Luckenbach Steamship Company and Flintkote Corporation have recently made extensive developments on their Canal properties.

In an effort to attract industries to the canal, the State last year enacted legislation whereby companies beginning operations on the canal may be tax-free for a ten year period. The city's business leaders are currently emphasizing the canal opportunities for chemical firms, (New Orleans is rich in natural resources such as petroleum, sulphur, salt and timber) and for fur and skin tanning enterprises.

Below—Ships berthed at the new International Free Trade Zone, New Orleans.

Above—Blaine Island and part of the mainland area where the expanding plant of the Carbide and Carbon Chemicals Corp. is located. Over 200 synthetic organic chemicals are made for every major industry in the country.

Chemical Wealth in the Kanawha Valley

by

T. R. Ragland

Plant Superintendent
Carbide and Carbon Chemicals Corp.,
South Charleston, W. Va.

JUST a little over 20 years ago a small construction crew went to work on part of the Rollin Chemical Company plant at South Charleston to clean up the old buildings and make the site ready for a newcomer to the chemical industry. Today, in an ever-widening area surrounding this original site, larger and more varied construction crews are still biting away at the earth, grading and digging foundations, and erecting the walls for new buildings. All this work was done, and is continuing, to make way for the expanding South Charleston plant of Carbide and Carbon Chemicals Corporation.

This is the plant that now covers Blaine Island in the Kanawha River, and many acres on the adjacent mainland. A multitude of red brick buildings, some old, some freshly new, stand there along with tall stacks and columns and silvery tanks, connected by mazes of pipes. Here the raw materials—hydrocarbon gas and such simple things as chlorine, lime, sulfur, and ammonia —are turned into over 200 different chemicals.

Produced from native raw materials, these chemicals are part of the wealth of the Kanawha Valley. They flow to every major industry in the country where they are used to manufacture things that are found on the farms, in the factories, and in the homes. They are produced by over 5,000 men and women living in Charleston and South Charleston, who come daily to the plant to work together at a variety of assignments, from initial research activities and the handling of raw materials to the final shipping operations. South Charleston, which had been staked out in 1907 and was already a flourishing town when Carbide came to it in 1925, has thus become a world-famous chemical center, bringing benefits to its community and the entire state.

Research Started the Chemicals

Most of Carbide's chemicals were not available commercially before the corporation began their manufacture. They came about as a result of Carbide's intense interest in research. It is typical, then, that some of the newest buildings now just about to be started will comprise a research center. All of Carbide's basic research activities relating to new chemical and plastic-producing processes and products will be centered in this laboratory.

Another building with equipment that will go into operation in a few months is a new development laboratory. The prime purpose of this laboratory is to show rayon producers and other companies in the textile field the process for spinning a new type of synthetic yarn.

Carbide was born of chemical research. The beginnings were in 1914 at the Mellon Institute of Industrial Research in Pittsburgh. Two research programs were being carried on there to discover new methods for making acetylene and for making chemicals from acetylene. Before long, both programs were replanned to take up the study of ethylene, another chemical raw material with properties similar to acetylene.

In 1917, the two companies sponsoring the research, together with three other companies having mutual interests, joined to form Union Carbide and Carbon Corporation. Thus the research programs were merged to be carried on by a third company, also a member of the new corporation.

By the end of 1919 this co-operation had made it possible to develop a satisfactory process for making and isolating ethylene, and researches at Mellon Institute had brought forth several chemical processes ready for trial at a small plant.

Carbide Began in West Virginia

A survey of natural gas resources showed West Virginia gas to be highly suitable for the manufacture of these chemicals. Furthermore, West Virginia possessed several important advantages: Ample coal as well as gas; convenient railroad and water transportation, and a location central to potential chemical markets. Besides, the people living in this locality were friendly and capable.

Accordingly, early in 1920, a small natural-gasoline plant on a 5-acre site at Clendenin was bought and converted into a combined ethylene and chemicals plant. In October of that year the project was incorporated as Carbide and Carbon Chemicals Corporation.

By 1925 the manufacture of chemicals had outgrown the capacity of the Clendenin plant, and the plant in South Charleston was purchased. It was only an 11-acre site. Later, Blaine Island and additional mainland property on both sides of the river were acquired for future expansion. Today, this plant occupies more than 300 acres.

But Carbide continued its development and expansion in the Valley. Plants were set up at Hastings and at Diamond, and also at Leach, Kentucky, to feed gas concentrates to the South Charleston plant.

Then came the outbreak of World War II. Even before Pearl Harbor, the Government, calling on Carbide's men and women in many ways, asked the company to help in meeting the need for rubber. Processes were developed, equipment was designed, skilled production personnel was selected, and a plant for making the two main chemicals needed for producing synthetic rubber—butadiene and styrene—was in operation within 18 months after the Government's request. This plant, which Carbide operated for the Government, was the famed plant at Institute.

Carbide has now established other plants at Niagara Falls, N. Y., Whiting, Ind., and Texas City, Tex. But the "home" plant is still the one at South Charleston, where new chemicals and greater tonnages of

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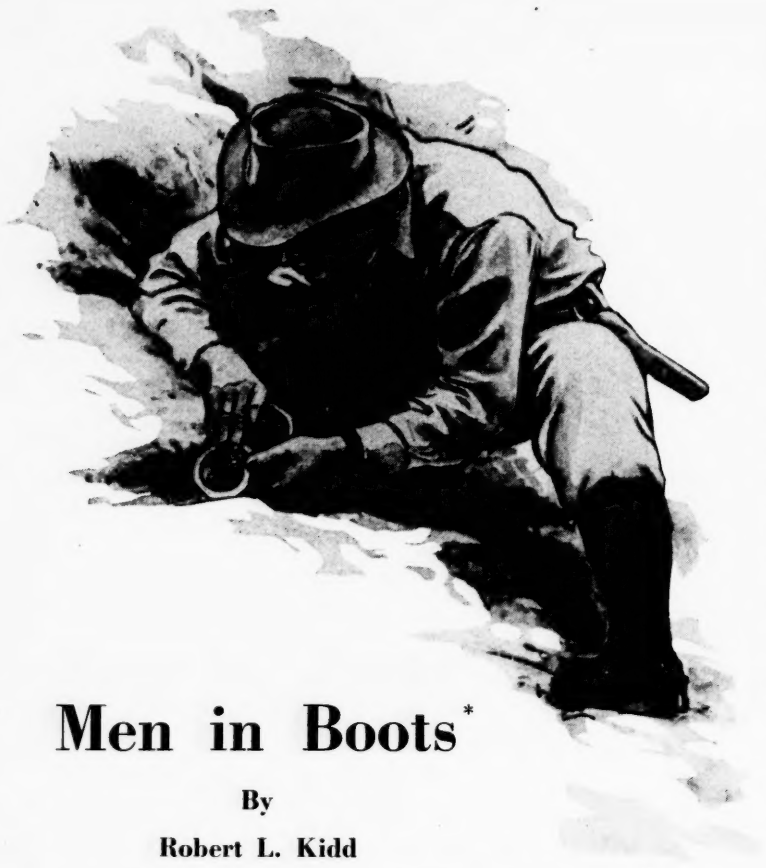
Below—Blaine Island 26 years ago. Today the island is occupied by part of the huge plant of Carbide and Carbon Chemicals Corp.



Men in Boots*

By

Robert L. Kidd

WE in the oil business are faced today with the job of delivering the goods on a little bet we made with the American public. It is an exciting prospect, and a challenging one. Exciting, because hunting oil is one of the most fascinating gambles in the world; challenging, because the results depend at least as much on the cooperation of nature as our own efforts.

During the war, any professional worrier could always steal a little newspaper space away from the long-range bombing missions of the B-29's by predicting that war, with its insatiable appetite for fuel, was eating away our inheritance and that we would certainly run out of oil in another 12 or 13 years.

To these viewers-with-alarm, the industry would explain patiently that, even though we had the equivalent of only about a dozen times our annual "living expenses" in the bank, we didn't have to touch it, ever, while we retained our earning power. In other words, as long as we could find and produce each year as much new oil as we consumed, there would be no need to draw on our bank account of proved reserves.

Of course, there were *some* grounds for concern. During recent years, we have not been finding as much new oil as we used up. Additions to our proved underground supplies came chiefly from upward revisions of previous estimates, and from the expanded development of existing fields. On the other hand, the industry could point out that it had been handicapped in carrying on needed exploration for some time. Materials and manpower had gone to war. And crude oil price ceilings, pressed down on the rising floor of producing expense, made a thin sandwich, with little room in between for the cost of prospecting for new reserves.

Once ceilings were off, it was argued, once manpower and materials were again available, the aggressiveness and ingenuity of the American petroleum industry would search out new oil pools, just as they always have done in the past.

So today the chips are down. Price ceilings are off, trained men are ready and drilling materials beginning to come through. The industry is out to make good its promise.

Results will not be measurable for some time yet, of course. Even after the discovery of a new pool, it takes time to develop an oil field. But let us see how oil hunters are going about their job.

Sunlight in a Prison

To begin with, we should understand something about nature's oil factory. Petroleum, like coal, may be considered as "fossilized sunlight." Geologists believe, in general, that coal had its origin in the ferns and other plant life that flourished on the swamp areas of the ancient times. This organic matter was crushed and subjected to intense pressure under the weight of succeeding layers of earth and rock that accumulated over the ages. The result was coal—and in it has been fossilized, as it were, the imprisoned sunlight of millions of years ago.

In much the same fashion, the general opinion is that petroleum was formed from the remains of marine life that existed near the shore lines of ancient seas. In liquid form, it too preserves the captured energy of prehistoric sunlight.

Now oil, as was once popularly supposed, does not occur in great underground lakes. It is imprisoned in beds of porous rock, in some respects like water in a sponge. There are two principal types of rock in which oil is commonly found and prospecting is most fruitful in areas where such beds lie buried.

Sandstones—Tiny grains of mineral or rock fragments which have been "cemented" with material such as iron oxide, calcium carbonate or silica. Much of the world's oil has been found in sandstones.

Limestones—These are composites of calcium and magnesium carbonates, often of shells and coral formations.

Now we are getting somewhere in our oil hunt. But one thing more is necessary. Petroleum, which has collected in, let us say, a layer of limestone, would be impossible to recover unless it had been trapped by some overlying bed of impervious rock (slate, for instance) folded in such a way as to prevent the oil from escaping. There are five gen-

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eral types of these underground traps.

Folds — Upward arches, also known as anticlines.

Domes—These resemble inverted soup bowls. There are three kinds—*structural,* a simple arching of the earth's crust; *salt,* a salt plug which has crystallized and burst through the overlying rock strata, arching them; *volcanic,* a plug of igneous rock (like granite) which has acted in the same manner.

Faults—Breaks or fractures in the earth's strata.

Monoclines—These are similar to a tilted table top. However, they must have a trap of some sort in them to hold the oil.

Unconformities—Picture a pile of blankets, representing buried layers of rock, lying at an angle. Then pile several more layers on top, but horizontally this time, and you have a typical unconformity.

Risk—But Less of It

Now even the most accurate cross-section chart of the earth's crust can only tell the oil geologist where conditions are favorable for putting down a well. Science has not yet evolved any system for proving definitely the actual presence of oil in commercial quantities. Nevertheless drillers nowadays generally get the most detailed geologic information they can obtain before putting up a drilling derrick.

Even in the pioneer days of the industry, men attempted to divine what lay beneath the surface of the earth. There were various types of magic "doodlebugs" popular in the early Pennsylvania fields. One of them was the forked stick, the end of which was supposed to dip when the operator walked over an oil pool. It was, of course, no more reliable than scaling one's hat in the air and drilling where it lit—which is said to have actually been done sometimes.

The theory of oil's relation to anticlinal structures was actually developed in 1861 and published in 1883. It was not until 1910, however, that geology began to be taken seriously by the industry. Even today, with the experience-tested kit of scientific tools employed by the geophysicist, it is often necessary to correct the preliminary picture of the underground structure in the light of later findings from test wells. And when it comes to locating oil there is no substitute for "Ol' Johnny Drill Bar."

Sometimes it is possible to get an idea of the underground structure from surface observations. The strata of the earth's crust lie piled one on the other like a stack of blankets, and sometimes they are folded in such a manner that some of the edges will penetrate clear to the surface. By identifying these outcrops and measuring the angle at which they enter the earth, the geologist can get a preliminary idea of what lies under his feet.

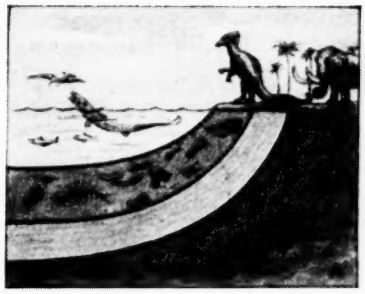
Formerly, it was necessary to make these surveys on foot. Today, aerial photography has been so perfected that mosaic maps covering hundreds of square miles can be made up, and by studying these, geologists can pick the most likely locations for more detailed surveys on the ground. Things look differently from two miles up, as any air traveler knows. You can make out features of the terrain beneath—even buried features—which are not readily distinguishable from the ground. The outlines of one of the early settlements founded by the Romans after their invasion of England were seen clearly by a pilot flying high over a field of waving grain.

Incidentally, one useful by-product of the war was a collection of aerial maps, now available for civilian use, of some 18 million square miles of the earth's surface. A new method of aerial photography, called trimetrogon, was developed during the war, which maps strips 35 miles wide in a single photograph. It is done by using three cameras, one shooting vertically and the other two pointed at opposite angles toward the horizons.

Once aerial photography and geologic studies of the surface and subsurface have blocked out potentially favorable areas for detailed analysis, the geophysicist takes over. His instruments are complicated, but the principles are simple enough. Here are some of them.

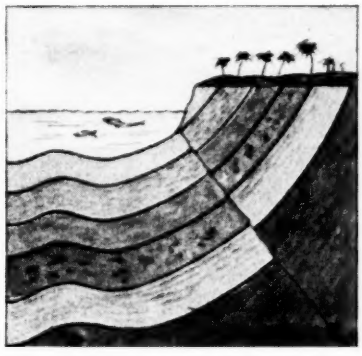
One instrument used by the geo-

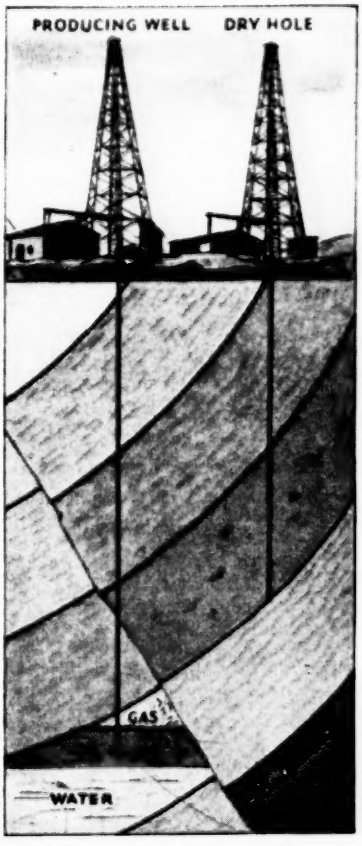
(Continued on page 180)



Above—Buried marine life near the shores of ancient marine seas provided the materials nature converted into petroleum.

Below—Subterranean shifts brought about new formations and established the vaults in which nature locked the treasures.





Right—Today, the geologist searches out these vaults and modern wells reach deep to release the hidden gas and oil.

New Products

Clark Industrial Tractor.

Lift for Fork Truck

A new lifting mechanism combining a tiering height of 130 inches and overall collapsed height of only 83 inches was introduced by Clark Tructractor at the Railway Supply Manufacturers' Asso. convention at Atlantic City, June 23-28. Known as the "Hi-Lo-Stack," the new lift is designed for use on Clark's "Carloader" line of fork trucks. Among the features of this new device is the ability to raise the fork 63 inches from the floor before there is any increase in the minimum overall height of the machine.

Simplification of design has made it possible to obtain these results with a single lift cylinder and a single set of uprights and inner-slides, for lift of maximum loads of 4000 pounds. The 83-inch overall height permits passage through 7 foot door openings. The 63 inches of "free" lift make it possible to tier material to box car ceilings without interference from uprights, and the 130 inches of maximum lift permits the most effective use of "air rights" in warehousing operations. Additional information can be obtained on request from Clark Tructractor, division of Clark Equipment Co., Battle Creek, Mich.

Puncture Plugging Device

The Kex, a tire puncture plug, is a new departure in design for sealing and patching punctured casings. Developed and marketed by Wedler-Shuford Co., 2222 Olive St., St. Louis 3, Mo., the device has a convexed surface on top or stem side of patch head which makes a natural fit against the wall curvatures inside the casing, eliminating air space between patch and casing wall, sealing and patching the hole all the way through with dynamic action, and thus protecting the inner tube. Three sizes of the plug serve puncture requirements of all casings, and are universal for all tire sizes. The plugs cure in with retreads and recaps or may be used with patching cement.

Orange Syrup

A table syrup made from oranges, recently developed by Dixie Lily Milling Co., 110 Nebraska Ave., Tampa, Fla., is now being marketed by the company in small, convenient containers under the trade name Webb's Orange Syrup. The product is made from the juice of Florida oranges and is recommended for use in drinks, on waffles, etc., and for seasoning purposes. The new product is a companion to the previously developed Webb's Pineapple Syrup, made in similar fashion from fresh pineapple.

Tandem Index

Nu-Plan Tandem Index is a device developed by Nu-Plan Record Co., 1410 H St., NW, Washington, D. C., and is a new product in the field of visible index equipment. The characteristic feature of these new indexes is their vertical column alphabetical reference. Names or subjects are listed seriatim consecutively in numbered relationship, at the same time being placed automatically in both alphabetical and chronological order. The new design permits quick finding with a known index number, name, subject or date. The company will supply sheets or cards for specified uses.

Motor-Driven Bicycles

Servi-Cycle, a new line of vehicles for individual transportation, announced by Simplex Manufacturing Co., New Orleans 19, La., are mechanically driven and come in a number of models. One model is designed for pleasure riding; one is called the Woman Shopper and is equipped with marketing basket at the rear; one is styled the Business Man and is equipped with windshield and rear rack for business contraptions such as portfolios, etc.; one model, the Mechanic, is a general service vehicle. All contain powerful motor, clutch and variable speed transmission, twist-grip controls, steel stranded belts, oil bath air cleaner, and optional kick starter. Weight net is 150 pounds; crated 200 pounds. Gasoline consumption averages one gallon to a hundred miles.

Fatigue Reducer

Pep-Up Tablets, a new product of Safety Service Co., 1215 McGee St., Kansas City, Mo., are compounded to enable the human body to get the saline element it needs without the irritating effects inherent in raw salt. The tablet was designed on the recognized medical dictum that the body requires additional salt during the hotter months if fatigue is to be minimized. Clinical findings show that most salts, including common salt, are absorbed through the intestines and not the stomach. Pep-Up tablets have a patented coating that prevents absorption by the stomach, and consequent irritation of that organ. The coating readily dissolves in the small intestine.

Sugarcane Wax Recovery

A practical starting point for recovering the valuable hard wax that forms a thin coating on growing southern sugarcane has been found by the U. S. Department of Agriculture. Scientists working at the Houma, La., laboratory of the Bureau of Agricultural and Industrial Chemistry have worked out an economical solvent process for the recovery of the crude wax and further solvent treatments for separating fats from the wax and purifying the wax when this is necessary for industrial uses. The process for recovering the wax and other byproducts of sugarmaking is now being developed commercially on a small scale.

Motor-Driven Gummer

Diagraph-Bradley Industries, a division of the Diagraph-Bradley Stencil Machine Corp., 3745 Forest Park Blvd., St. Louis, Mo., has announced that they are in production on their motor-driven Stikfast Label Gummer. The Stikfast Label Gummer takes labels any length and up to 8½ inches in width, and has an adjusting screw for determining the amount of glue that is put on the back of the label. The machine will use glass glue, tin glue, or other adhesives used to put labels on products.

The machine is hand-fed, with the label passing between two rollers, and receiving the desired even coating of glue, which makes the label adhere evenly and smoothly. The machine is designed for companies who have no need for large-type labeling equipment, or for those who have only small runs. In many cases, the Stikfast Label Gummer is used in conjunction with a large machine to put on a second or subsidiary label, or a tax stamp.

One-twentieth horsepower motors, backgeared with gear reducers built right into the motor are featured on the unit. A patented slip coupling assures direct drive, and yet provides quick detachment of the label gummer from the motor for cleaning. Parts are of long-wearing bronze or stainless steel, and will not rust. The mechanism can be submersed in a pail of water over night to dissolve the glue.

Metal Protector

Recently developed by Dennis Chemical Co., 2700 Papin St., St. Louis, Mo., is a new, protective, liquid-plastic coating for polished or bright metal called "Redskin." Coating is applied simply by spray, brush or dipping on bright metal surfaces. Dries quickly, forming a tough, elastic film that is impervious to rust, chemical reaction, smears, or normal handling. Red color instantly warns against promiscuous rough handling of bright or polished surface. When desiring to uncover bright surface, edge is picked up with fingernail and coating pealed off entire surface in one continuous strip.

Window Fan

Wind-Way Fan & Ventilator Co., 531 St. Joseph St., New Orleans, La., has designed a guarded type thirty-inch window fan, so built that drapes, shades or curtains cannot be drawn into the fan, and the motor is set so as to prevent injury to human fingers. The unit consists of a fan and motor assembled in a protected frame. It is easily installed and requires no special wiring. It is claimed that this fan will completely air-cool five or six rooms, especially in houses where the rooms are in line. Two or more fans are suggested for structures of larger size. They are recommended for practically all types of buildings where air-cooling is a desired feature, including homes, offices, shops and small stores. The fan claims quietness of operation without loss of volume or effectiveness.

Industrial Adhesives

A comprehensive line of adhesives has been developed and placed on the market by Industrial Adhesive Co., 748 Orange St., New Orleans, La. Included in the line are Canners Glues, Case and Carton Sealing Glues, Set-up and Folding Box Glues, Bottle Label Gum, Bag and Bottom Glues, Seam Paste and Tin Paste. In addition, the company works with customers on special problems and supplies chemists at cost for the purpose. Twenty-four-hour delivery service is offered.

Solenoid Diffuser

A device that enables you to get rid of flying insects whenever you want by merely flicking a switch has been developed by Virginia Smelting Co., West Norfolk, Va., manufacturers of refrigerants and industrial chemicals. Permanently installed, it becomes as much a part of a building as the heating system or the electric wiring, and can be placed in any enclosure, large or small. It was designed particularly for Lethalaire, Virginia's deadly new aerosol spray.

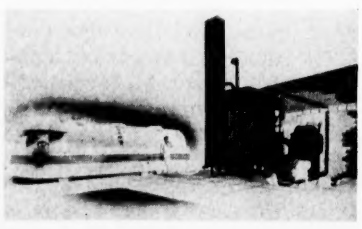
The makers claim the Solenoid System will: Apply an aerosol insecticide in any enclosure in the particle size recommended for maximum killing effect; automatically calibrate and control the correct entomological dosage, thus preventing unnecessary waste; eliminate time and labor spent in applying insecticides, and afford maximum safety by preventing overdoses and reducing undesirable residues to the minimum. The system embraces three main components: a magnetic valve, the solenoid with four nozzles; an electrically-timed switch, and an aerosol supply source which can be quickly and easily replenished. Suppose, for instance, you have a room about 100 feet long, by 30 feet wide, with a ceiling 10 feet high. Spaced at calculated distances on the ceiling are three small devices which look very much like the familiar sprinkler of a fire-sprinkler system. These are the solenoids, electrically connected to the wall switch.

Heating System

Development of a heating system is announced by the organizers of Heatmasters, Inc., Baltimore, Md., to fill the need for low-cost, completely automatic heat among a number of different classes of small fuel consumers. These consumers range in size from the individual householder, through the multiple family apartment house operator and a wide variety of small commercial and industrial enterprises, up to the industrial installation with a heating or power plant of 200 horsepower capacity.

The fuel is bituminous gas slack coal, pulverized in a manner said to be heretofore unknown.

Tank delivery by Heatmaster.



New Type Rug

A unique cotton type rug, apparently entirely new and different from any other cotton rug on the market, has been developed by Belrug Mill, Inc., Greenville, S. C. It is made of 8-3 ply cotton yarn, and the yarn is made of fine cotton of the same grade and staple used in better grade cotton cloths. The rugs are predyed and are colorfast. This rug is unrippable since it is all woven into one piece at one time. In addition, it does not buckle or shed and is complete without the old type canvas back. The rugs are laundered and shrunk in the plant before shipment to eliminate possibility of later shrinkage. Due to the all-woven, one-piece process, the finished product is soft and pliable and launderable with safety and ease. Colors are of solid pastel shades to enable easy effectuation of color effects for decorative purposes. The rugs go by the trade name of Wunda Weve.

New Use for Peanuts

Virginia Polytechnic Institute is leading the way in discovering in activated char a new use for peanut hulls. Char, a powdered form of charcoal, is widely used in industry and agriculture as a filtering or distributing agent for removing odors in water filtration systems and to give a better spread to the inoculant in plant food manufacture. Anyone interested in the Utilization of Peanut Hulls as Liquid Absorbent Chars, should write to: Frank C. Vilbrandt, Head, Department of Chemical Engineering, Virginia Polytechnic Institute, Blacksburg, Va.

Plastic Material

A new product offering properties said to have been previously not available in a thermo-plastic material has been announced by B. F. Goodrich Chemical Co., Cleveland 15, Ohio. Designated Geon Polyblend 500 x 503, this development is the first in a series of colloidal blends of Geon polyvinyl chloride resin and Hycar nitrile rubber polymers.

Geon polyblend combines the toughness and chemical resistance of polyvinyl chloride with the solvent resistance and flexibility of nitrile rubber. It is also unique in that the valuable characteristics of vinyl elastomers are achieved with no liquid plasticizer. The nitrile component of the polyblend serves as a non-extractable, non migrating, polymeric plasticizer. If desired, conventional liquid plasticizers may also be added.

Revolving Closet

A revolving shelf and clothes closet unit which puts every item within easy reach is among the new building products listed in the June Construction and Construction Materials Report of the Department of Commerce. This unit is constructed with a circular rod for hanging clothes, a circular shoe holder, and a round shelf for hats. Every garment turns to the "front" of the closet. There are also available, according to the manufacturer, revolving kitchen wall cupboards and base cupboards, and a heavy-duty revolving basement and pantry storage unit.

Hydraulic Bulldozer

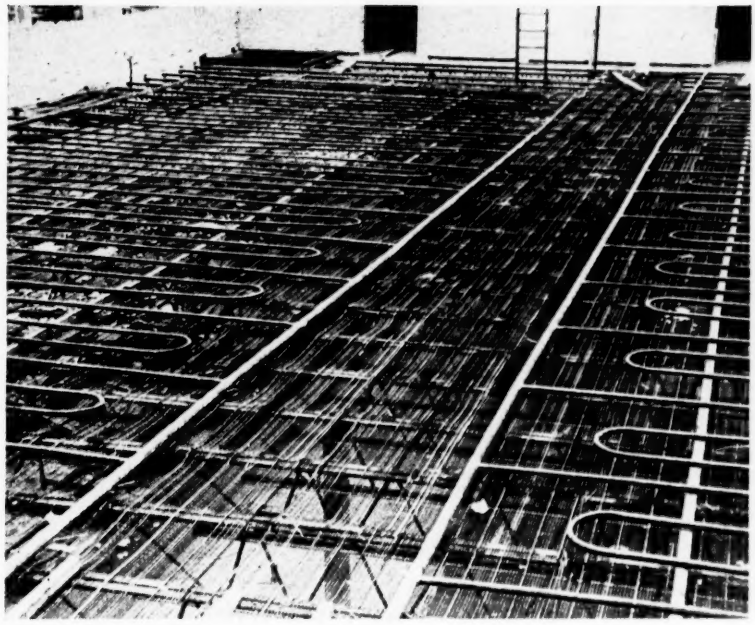
Beatty Machine & Manufacturing Co. of Hammond, Ind., announce a new 400 ton model welded steel Horizontal Hydraulic Bulldozer, designed for structural shops, implement plants, car shops and general application throughout the heavy metal working industry. The machine features a high operating speed, in relation to its heavy size, and being hydraulic, does not require that dies be shimmed or adjusted minutely in order to prevent machine damage.

Speed is variable, and controlled by the amount of movement of hand lever or foot pedal, at operator's will. Stroke adjusting rod collars allow machine to be set for predetermined ram travel. Thus, if a 12-inch stroke is required, unit can be set to automatically reverse after 12 inches of travel.

Cleaner-Blower

Ideal Industries, Inc., 1123 Park Ave., Sycamore, Ill., announce a new completely redesigned portable electric cleaner which has, among its many new features, increased cleaning action and the ability to run continuously 24 hours a day, if necessary.

Powered with a 1⅞ HP motor, the Cleaner blows air at a velocity of 25,500 feet per minute. The total weight is 14½ pounds. The Cleaner, with a ⅔ HP motor, displaces air at 19,000 feet per minute. Weight—9½ pounds. Both models have precision type, sealed ball-bearings and air stream cooling scrolls which permit continuous operation without overheating.



Above—Wrought iron radiant heating coils installed in 3-inch concrete structural slab of Chesapeake Auto Supply Company's new building. The floor is built of metal bar joists covered by metal rib lath. Grid pipes were blocked up on wood strips to make them level with headers.

Grinder-Polisher

The Hill Acme Company of Cleveland, Ohio, has introduced a line of 2-roll vertical Abrasive belt grinding and polishing machines for flat polishing of ferrous and non ferrous metals and other materials.

The machines are available in three general types. (1) Strip type for processing strip material in coiled form. (2) Plate or bar type which incorporates the use of feed or pinch rolls for conveying the material under the polishing head. (3) Sheet type with reciprocating hydraulic table drive. Machines are built in a progression of widths up to a maximum of 60 inches. Endless coated abrasive belts 10 feet 6 inches long are utilized on all units.

The 2-Roll vertical polishing head is the same for all three types of machines, and covers basically a dynamically balanced upper steel idler roll and a lower rubber covered contact or work roll—over which the abrasive belt travels.

Electronic Area Meter

A new electronically-operated Area Meter developed by Bailey Meter Co., 1050 Ivanhoe Road, Cleveland 10, Ohio, is said to accurately measure the more viscuous liquids; black liquor, tar, chemicals, distillates, and refrigerants as well as freer flowing liquids; water, oil, gasoline, etc. This flow measuring instrument consists of a specially designed telemetering transmitter connected to a standard Bailey electronic receiver. The transmitter is installed in the pipeline, much like a valve.

Crude Oil Purifier

More economical use of scarce tetraethyl lead, the anti-knock compound added to gasoline, is made possible by a new process that enhances the performance of motor fuels by removing sulfur impurities, G. M. Brooner and C. J. Helmers of the Phillips Petroleum Company, Bartlesville, Okla., reported at the American Chemical Society's Fifteenth Midwest Regional Meeting, sponsored by the Kansas City Section of the Society. Pointing out that the use of crude oil of high sulfur content is becoming more and more prevalent, the paper asserted that sulfur increases knocking and requires addition to more tetraethyl lead. In the new process, the gasoline is vaporized and strained through a bed of bauxite crystals that absorb as much as 95 per cent of the sulfur, according to the report, which declared that the octane rating is increased by as much as ten units, and tetraethyl lead requirements are correspondingly lowered.

Installation Technique

Installation of radiant heating coils in the structural concrete slab for the second floor area of a new building erected recently by Chesapeake Auto Supply Co., Norfolk, Va., marks one of the first times such construction practice has been employed. According to the general contractor for the project, E. T. Gresham Co., Inc., Norfolk, the radiant heating system was operating successfully during the latter part of the 1946-47 heating season. Construction technique on the second floor, an area of 4,000 square feet, involved use of metal bar joists, supported on I-beams, covered by metal rib lath. Engineers point out that embedding radiant heating pipe coils in structural floor slabs is a method which should result in lower first cost of a building because it eliminates the additional joists or I-beams necessary when a double slab is involved and requires only a single pour of concrete. Rudolph, Cooke & Van Leeuwen, Norfolk architects, designed the building. The Gresham Co., besides being general contractors, designed and fabricated the radiant heating system which was installed by V. R. Stell, Norfolk heating contractor.

Compressors

The Davey Compressor Co., Kent, Ohio, has announced a new line of two stage, air-cooled industrial air compressors of 60, 105, 160, 210, 315 c.f.m capacities. Known as "Air Chief Industrials," these machines feature Permanent Peak Efficiency Valves and the new Davey Equi-Balanced crankshaft. The latter, recently invented by Paul H. Davey, company president, is reputed to reduce compressor vibration to a previously unachieved minimum. Its use, coupled with employment of modern rubber vibration mounts, makes possible the elimination of heavy mounting bases and facilitates the ready removal of units from one location to another.

New Skid and Skid Box

Two new pieces of materials handling equipment are announced by Phillips Mine & Mill Supply Co., Pittsburgh, Pa. They are designated as the open "Phil Tier Skid" (see B in accompanying photo), and the "Phil-Tier Box." Both units have been designed and constructed for hauling or storing all types of industrial parts, products, scrap, etc. They can be used with either platform or fork lift trucks. The "Phil Tier Skid" is an open unit which provides easy access to materials when skids are stacked. The "Phil-Tier Box" is used for storing or moving materials that do not lend themselves to neat piling, such as: scrap, castings, parts or products having odd shapes, etc. The new units can be stacked separately or interchangeably.

(More on page 150)

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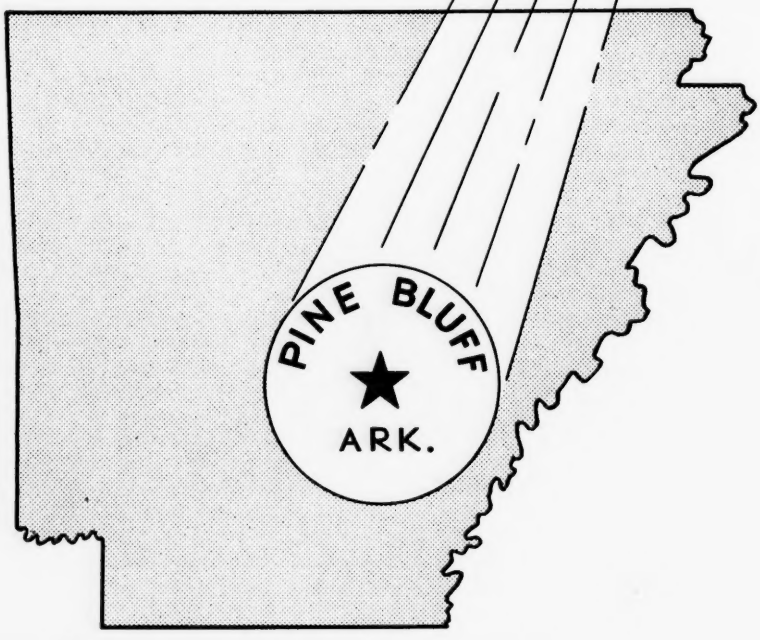
THE BRIGHT SPOT
FOR *Industry*

OFFERING AN ABUNDANCE OF ALL FACTORS--FOR A PROFITABLE OPERATION

★ *Efficient Labor* ★ *Adequate Transportation and Utilities* ★ *Low Taxes* ★



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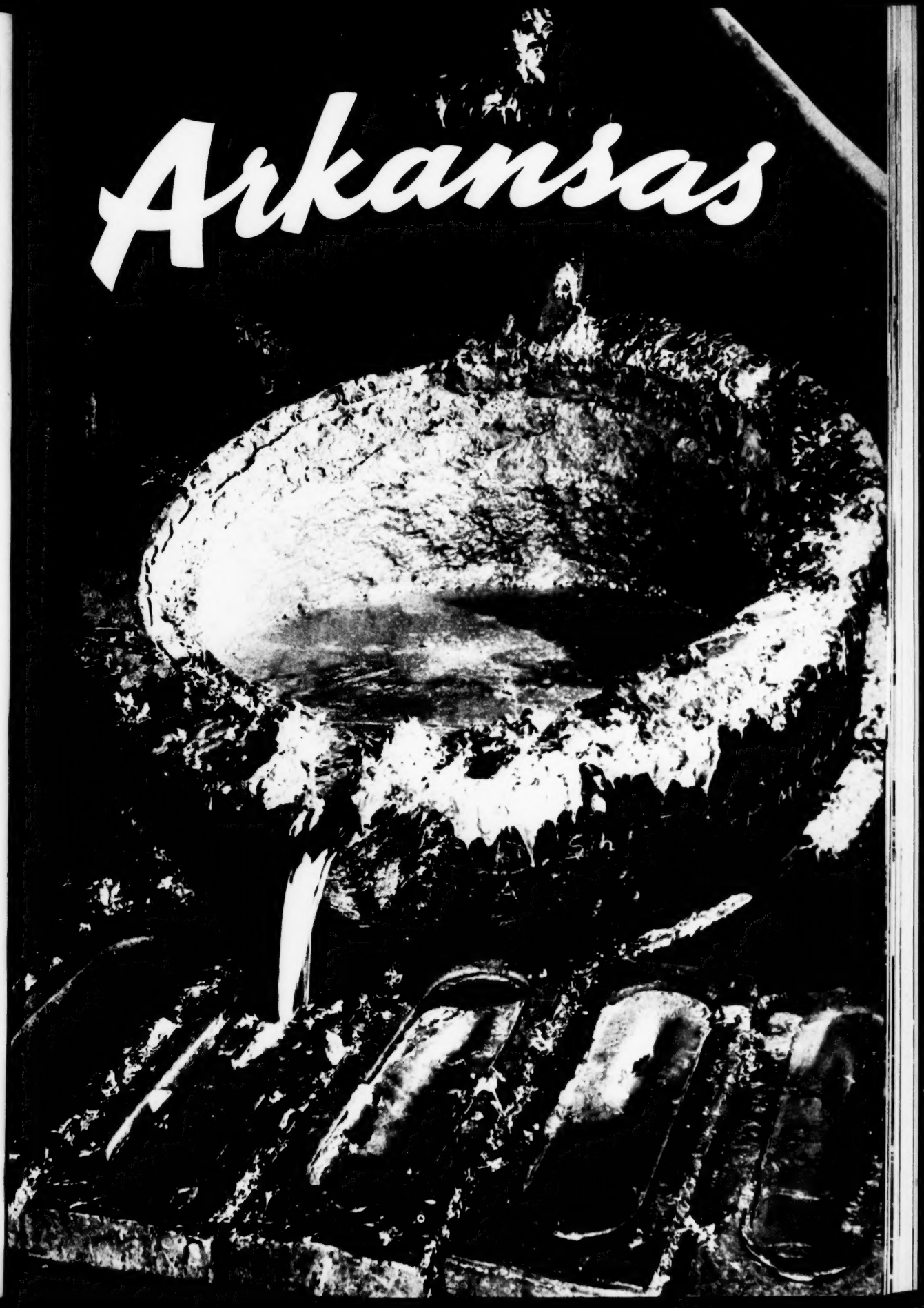
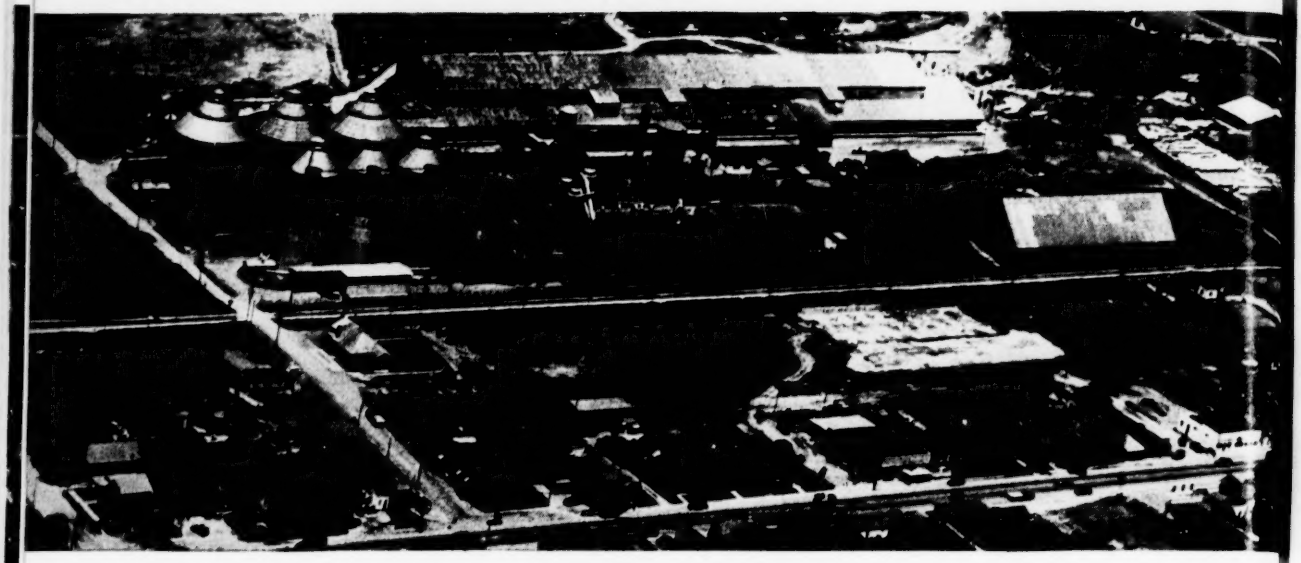
Arkansas





Above—Buckeye Cotton Oil Mill.

MANUFACTURING

The Industrial Revolution is under way in Arkansas.

In the words of one of the state's foremost citizens, Arkansas "has rolled up its sleeves and is on the march."

Every town, from the largest to the smallest, is steamed up over the possibilities for obtaining additional industries and payrolls. The whole state is in a ferment of activity designed to end once and for all Arkansas's traditional dependence on agriculture and primary processing for its income.

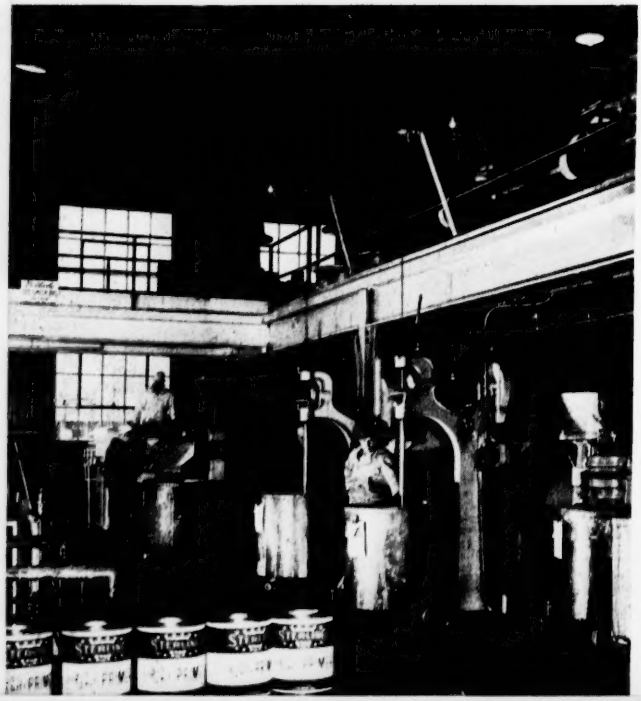
Tradition also is being broken, for a state split sharply between cotton plantation lowlands and the Ozark uplift, by the degree of unity achieved in this struggle to improve the state's economy. Business men, government officials and educators are all working closely together toward the establishment of more manufacturing plants in Arkansas, either by outside concerns or by home-State enterprises. Where one town is unable to handle a prospective plant, its leaders are willingly turning the matter over to neighboring communities. All for Arkansas is the keynote.

Results? More than a thousand new industries or large expansions involving new construction in recent years. A capital investment in plant approaching $100,000,000, new industrial jobs totaling more than 25,000 in number with an additional payroll of $50,000,000. If these figures seem small by comparison with those of more heavily industrialized states, it must be remembered that Arkansas has had a long way to go toward achieving a balance between its agriculture and industry.

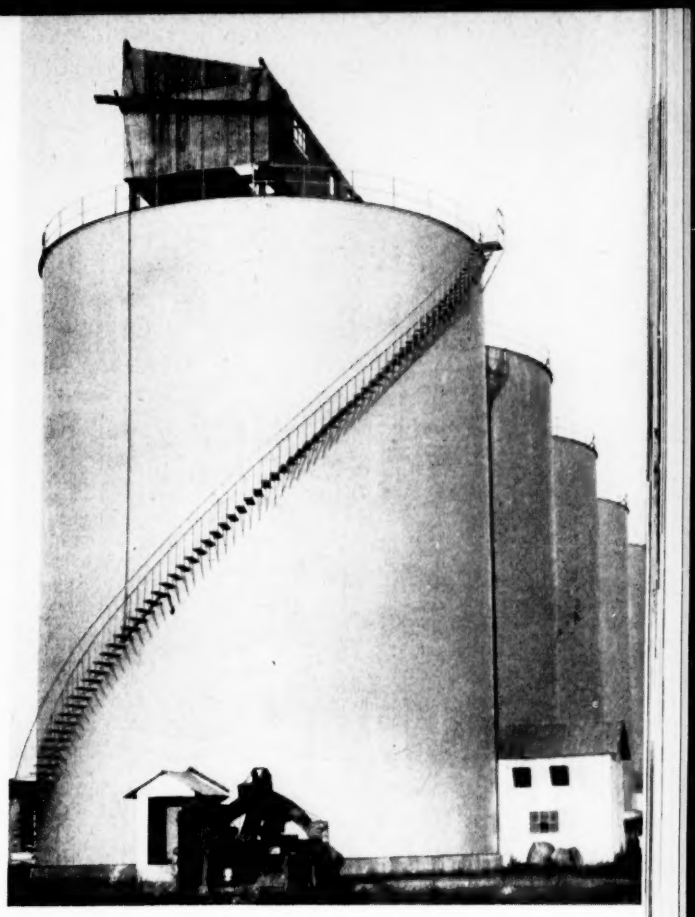
Arkansas became a state in 1836. At that time it had a population of about 60,000 and Little Rock was a town of less than 2,000. Cotton plantations dotted the eastern alluvial sections of the region; squatters, hunters and trappers inhabited the western hills. Such industry as existed was of a handicraft character. Forests covered the state except for the relatively small area devoted to agriculture and the region known as the Grand Prairie, now one of the world's richest rice-growing belts.

A century later—in 1940—Arkansas had a population of nearly 2,000,000. But it was still a rural, agricultural state. More than half its citizens derived

Below—Making paint in Stebbins & Roberts plant at Little Rock.



Right—Oil Mill storage elevators at Blytheville, Ark. Capacity is 420 bushels of cottonseed and soybeans.



their livelihood from farming. Only 36,000 wage earners were engaged in manufacturing. The state had been largely by-passed by the colossal growth of American industry in the intervening 100 years.

That picture is changing now. A new Arkansas is emerging—one that gives promise of being better balanced economically and of providing a permanently improved market. World War II and the investment by the federal government of more than half a billion dollars in Arkansas war plants provided the stimulus. At its wartime peak, manufacturing employment in the state rose to about 93,000. Today, with the war plants either closed or in the process of conversion to civilian industries, manufacturing jobs have leveled off to about 70,000—nearly double the total reported in the 1939 Census of Manufactures. And when plants now under construction or definitely projected are in production, such employment will again move toward a new high level.

Arkansans are keenly conscious of the benefits that have come with new manufacturing plants turning out goods of a type never before produced in the state. They have seen their per capita income jump from $252 in 1940 to $654 in 1945, an increase of 160 per cent while the national average was rising 100 per cent. They have seen their total income rise from less than a half a billion in 1940 to more than $1,200,000,000 in 1946. Wages and salaries which had totaled $229 millions in 1940 increased to around $600 millions in 1946.

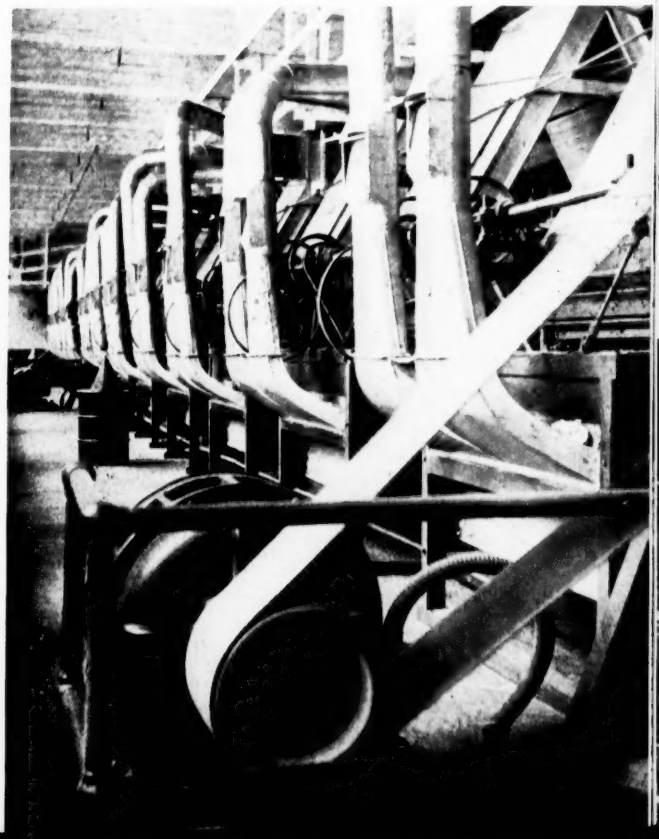
Value of manufactures soared from $160 millions in 1940 to $618 millions in 1946 as estimated by the Bureau of Research, University of Arkansas. Bank deposits more than trebled, wholesale and retail sales more than doubled.

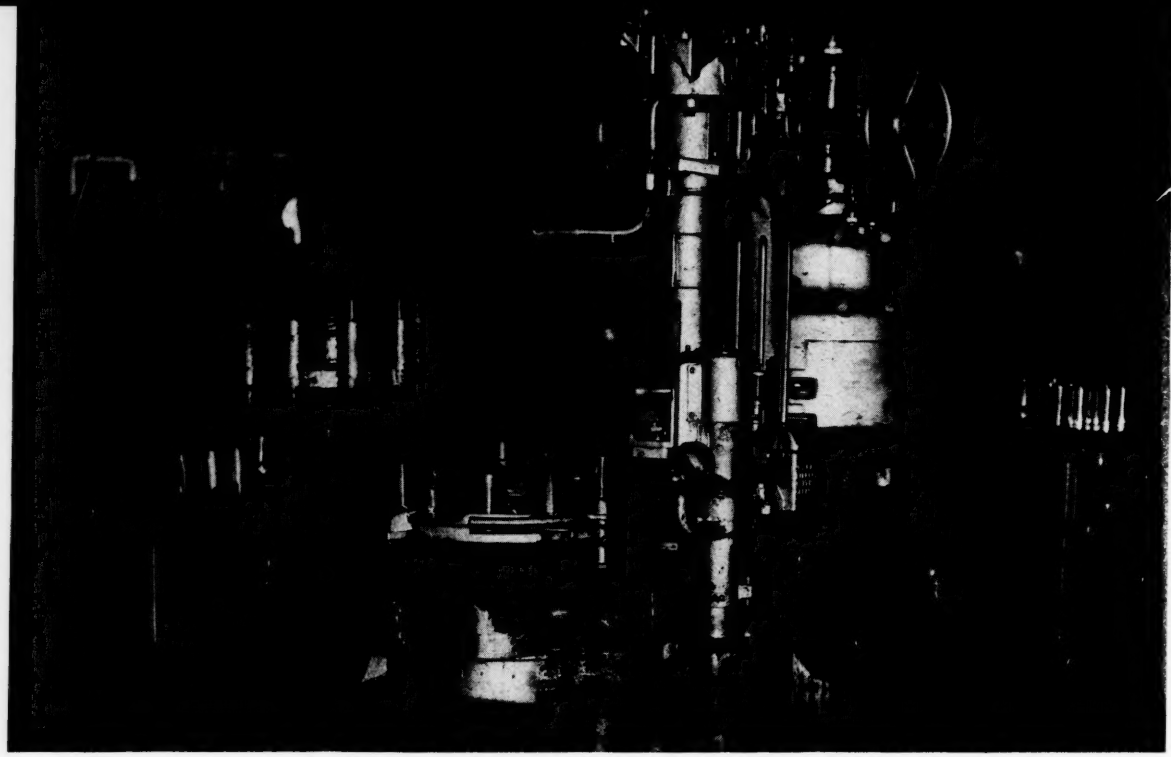
Of course, entering this picture was the sharp gain in income from agriculture. Value of Arkansas farm production, which in 1940 totaled $160 millions rose to $490 millions for the 12 month-period ending March, 1947. But playing its part in this farm income upswing was the vastly improved home market created by additional canning and freezing plants, meat packing establishments and dairy products plants.

Arkansas, in common with other Southern states, is being pushed toward increased industrialization by the pressure of increased farm production achieved with fewer man-hours of agricultural employment through the spread of farm mechanization. One example will suffice. On a 1,700-acre truck farm near Van Buren, the same production that formerly required the services of 45 workers is now being obtained through increased use of machinery with eight employes.

Cotton acreage is about half what it was in Arkansas 15 years ago but yield of lint per acre has doubled and is now crowding 400 pounds. Production is being concentrated in the delta sections as marginal

Below—Cleaners remove linters from the cottonseed before cooking and pressing to extract the oil.





Above—Spinach canning at Springdale, Ark.

farmers turn to other crops and livestock. On the big plantations, mechanical cotton pickers, choppers and flame weeders, combined with check plowing or cross cultivation can be expected to reduce farm employment still further. Arkansas' agricultural labor force dropped during the war from 650,000 to around 270,000 and yet production was maintained. These displaced farm people must find other jobs—either in Arkansas or elsewhere. Arkansas is making a determined effort to provide those jobs—in industry.

Basically, Arkansas offers a fertile field to industries using raw materials. It has 22 million acres of forests with an annual increment of more than 2 billion board feet of commercial timber. It has 350 million barrels of known oil reserves, 1,300 billion cubic feet of natural gas, 800 million tons of semi-anthracite coal, 97 per cent of the nation's commercial grade bauxite, enormous reserves of limestone, glass sand, syenite, sand and gravel, special clays, novaculite, tripoli, marble barite and lignite. Also found in commercial quantities are manganese, lead and zinc, mercury, titanium, asphalt, chalk and marl.

The state produces normally 1.3 million bales of cotton, 15 million bushels of rice, 25 million chickens,

Below—Furniture factory at Camden, Ark.

Above—Making alarm clocks at Little Rock.

3 million bushels of peaches, 3.5 million bushels of soybeans (largest production in the South), 1.6 million tons of hay. It is an important producer of beef and dairy cattle, hogs, corn, potatoes, oats, apples, grapes, vegetables, strawberries, melons and pecans.

Many of the new industries Arkansas has gained in the past several years are based on these resources. Chase Bag Company is producing multi-wall paper bags in its new plant at Crossett from Arkansas paper which will be used also by Dixie Cup Company in its new Fort Smith paper cup factory. Lion Oil Company, spending several million dollars to convert and enlarge an anhydrous ammonia war plant near El Dorado, is producing ammonium nitrate for fertilizer and nitric acid from Arkansas natural gas.

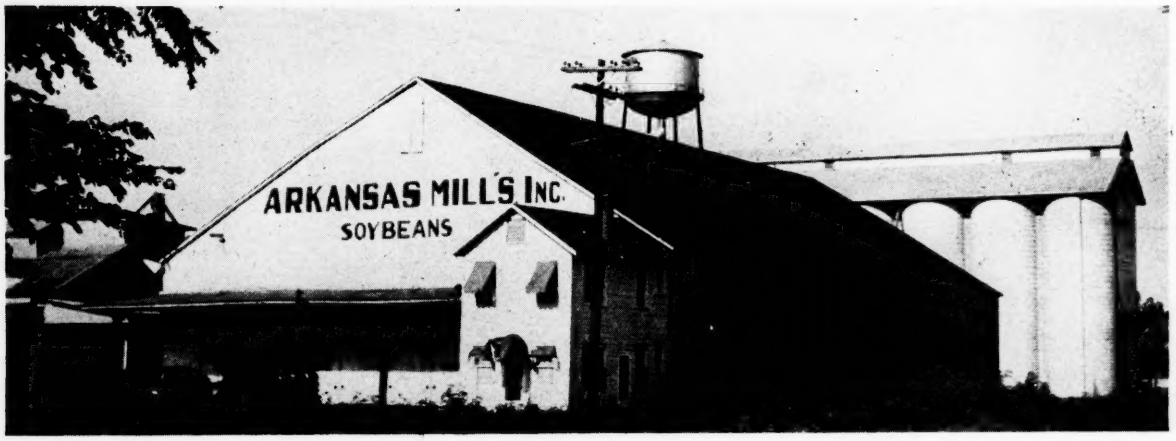
American Can Company in its new plant at Fort Smith is producing cans for Arkansas spinach, tomatoes, beans and other vegetables and fruits, 10 million cases of which are packed annually by some 170 Arkansas canneries. Pet Milk Company at Siloam Springs and Kraft Foods Company at Bentonville, Berryville and Carlisle are condensing or turning into cheese part of Arkansas' big milk production.

Arkansas Rice Growers Association has built the largest and most modern rice mill in the world at Stuttgart, along with huge reinforced concrete driers at Lonoke, Wheatley, Hickory Ridge, and Jonesboro. C. R. Walton Rice Mill at Stuttgart has a new $400,000 plant producing specially processed rice. Trailmobile Inc., at Fort Smith is producing truck bodies from Arkansas woods, which are also utilized for Chrysler Town and Country auto bodies by Pekin Wood Products Co. in its greatly enlarged plant at Helena, by Locksley Inc., of Little Rock in its new factory turning out archery tackle, by new furniture factories, handle mills, and in prefabricated houses and garage operations.

National Lead Company and Magnet Cove Barium Corp., are processing Arkansas barite in new plants; the first solvent process cotton oil mill in the world has been built at Delta Products Company at Wilson; Tex-Ark Rock Wool Corporation is building a plant at Texarkana to blast Arkansas marl into rock wool insulation; Reynolds Metals Company has leased and is operating the gigantic alumina and aluminum plants built at a cost of some $80,000,000 by Defense Plant Corp., near Little Rock and Hot Springs.

These are a scant few of the scores of new industrial plants which have been established recently to process natural resources of Arkansas. Many more

Below—Soybean mill at West Memphis.



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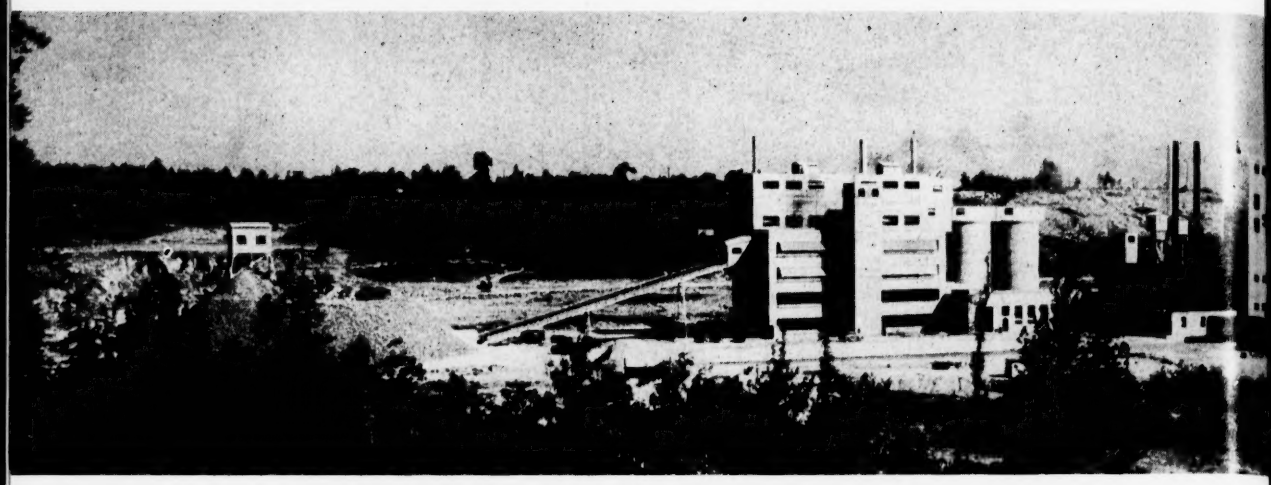


Above—Granules for roofing are made in this plant of Minnesota Mining & Manufacturing Co.

have been located in Arkansas because of the outstanding war record of Arkansas labor, its productivity, its intelligence and its conservative, friendly attitude toward the employer. Additional factors are the mild climate, growing importance of the Central and Southwestern market, favorable transportation facilities, low taxes and the abundance of outdoor recreation facilities for hunting, fishing, picknicking, and the large number of small towns in which the worker is a social entity in the community.

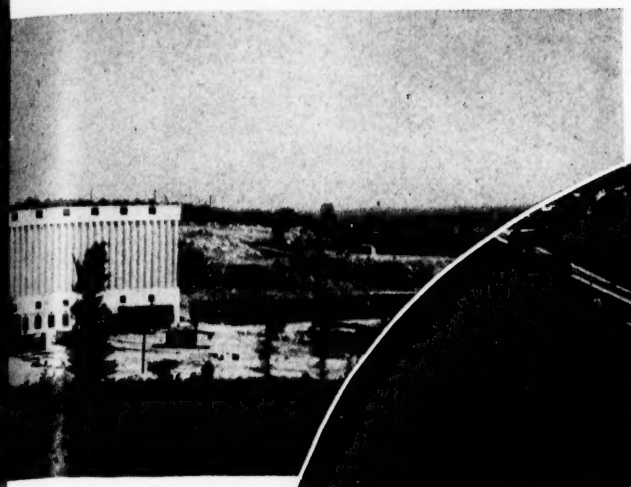
Westinghouse Electric Corporation selected Little Rock as the site for a $3,000,000 incandescent lamp factory, influenced perhaps by the favorable experience of U. S. Time Corporation which is employing 700 persons in its Little Rock alarm clock plant. Visking Corporation will produce unwoven cotton fabrics and plastic sausage casings in its North Little Rock plant.

The giant International Shoe Company is a bellwether in the movement of the shoe industry into Arkansas. International is establishing five plants in Arkansas—at Conway, Russellville, Searcy, Bald Knob and Batesville. Arkansas, which never had a leather working plant prior to 1945—has 11 shoe factories either in production or building. Shoe companies entering the state include Brown, Milius, Ed White Jr., Frolic Footwear, Trimfoot. Others are looking for locations.

Garment manufacturers are coming into the state also. Oberman & Company, Shanhouse & Sons, White House Uniforms, N. & W. Overall Co., Rice-Stix Dry Goods Co., all have new plants or expansions.

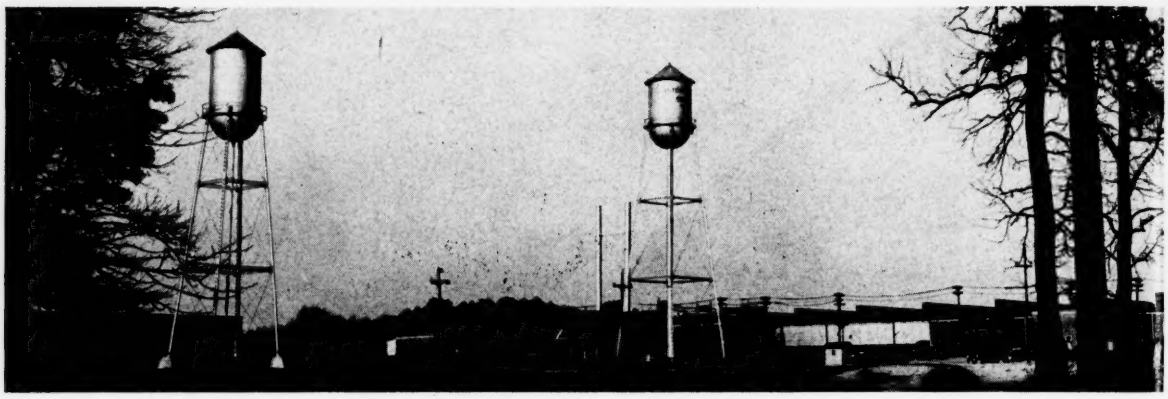
Munsingwear Inc., is making nylon hosiery at Rogers, Ark., Stebbins & Roberts, Inc., paint brushes in Little Rock, Hollywood-Maxwell Company women's brassieres, at Arkadelphia, Wood Manufacturing Company fishing lures at El Dorado, Grapette Manufacturing Co. beverage syrups at Camden, Ben Pearson Company bows and arrows at Pine Bluff, Walridge Knitting Mills women's bobby sox at Jonesboro, Harrison Tool & Die Casting Co. parking meters at Harrison, and Southwest Manufacturing Company baseball bats and aluminum fishing boats in Little Rock.

Below—Wood Preserving division of Koppers Co.



Circle—Acme Brick plant near Malvern, Ark.

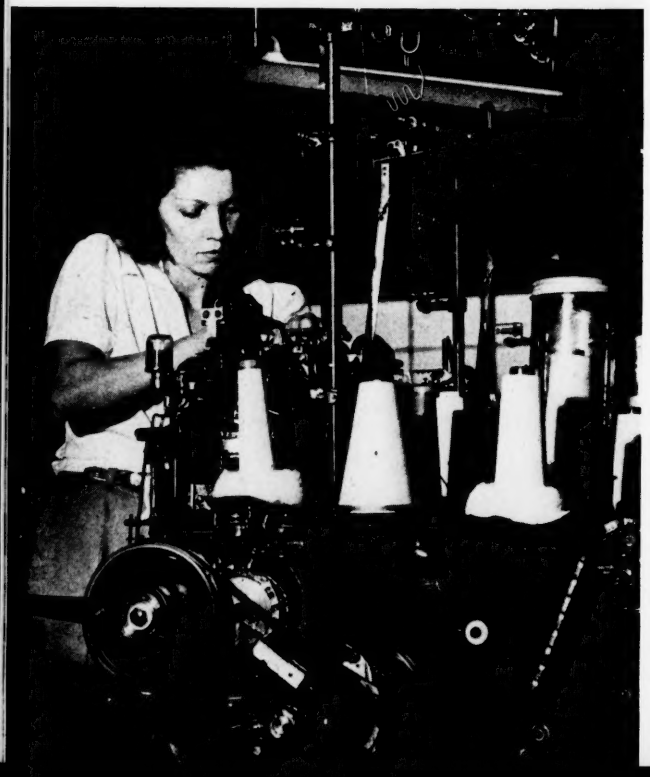
Below—Cotton Oil mill.



Above—Shoe plant, one of five International factories in Arkansas.

The list could go on at length. Arkansas Power & Light Company has found it necessary greatly to increase its installed generating capacity to take care of the expanded industrial load—now greater than during the war. Even as the new $3,500,000 Cecil Lynch power plant in North Little Rock was dedicated May 30, officials of the company announced that the plant's capacity would be increased from 30,000 kilowatts to 90,000 at an additional cost of $7,500,000. A.P.&L.has purchased the unfinished Lake Catherine power plant built at Jones Mill by Defense Plant Corp., and will complete it as soon as possible as a 90,000 kilowatt plant at a total cost of $10,000,000. New high voltage transmission lines are being built as part of a $54,000,000 five-year expansion program by the power company, and construction of Bull Shoals project in Baxter and Marion counties to be started this summer.

Below—Scene in the Munsingwear nylon plant at Rogers, Ark.



Arkansas Louisiana Gas Company is spending several hundred thousand dollars laying gas mains to new industrial installations in the Little Rock area.

Population of metropolitan Pulaski county, which includes Little Rock and North Little Rock, is estimated currently at more than 200,000. Other cities of the state have shown a marked growth since 1940. Population of Fort Smith is estimated at 48,000, Texarkana 45,000, Pine Bluff 42,000, Hot Springs 36,000, El Dorado 24,000, Jonesboro 17,000, Helena-West Helena 15,000, Fayetteville 12,000, Blytheville 12,000. West Memphis, which only a few years ago, was little more than a crossroads, now has a population of around 8,000. Arkansas, which at the height of wartime emigration to war plants in other states, saw its population dwindle to 1,780,000, has regained these residents and has about 2,000,000 at the present time. Fewer persons are living on farms, the farms are larger and more profitable, and the towns and cities continue to grow.

One of the most remarkable aspects of the Arkansas industrial scene is the exceedingly rapid expansion that has taken place in the number of home-owned and managed manufacturing plants. These are producing processed foods and feeds, wood products, chemicals, metal goods and a great variety of miscellaneous articles.

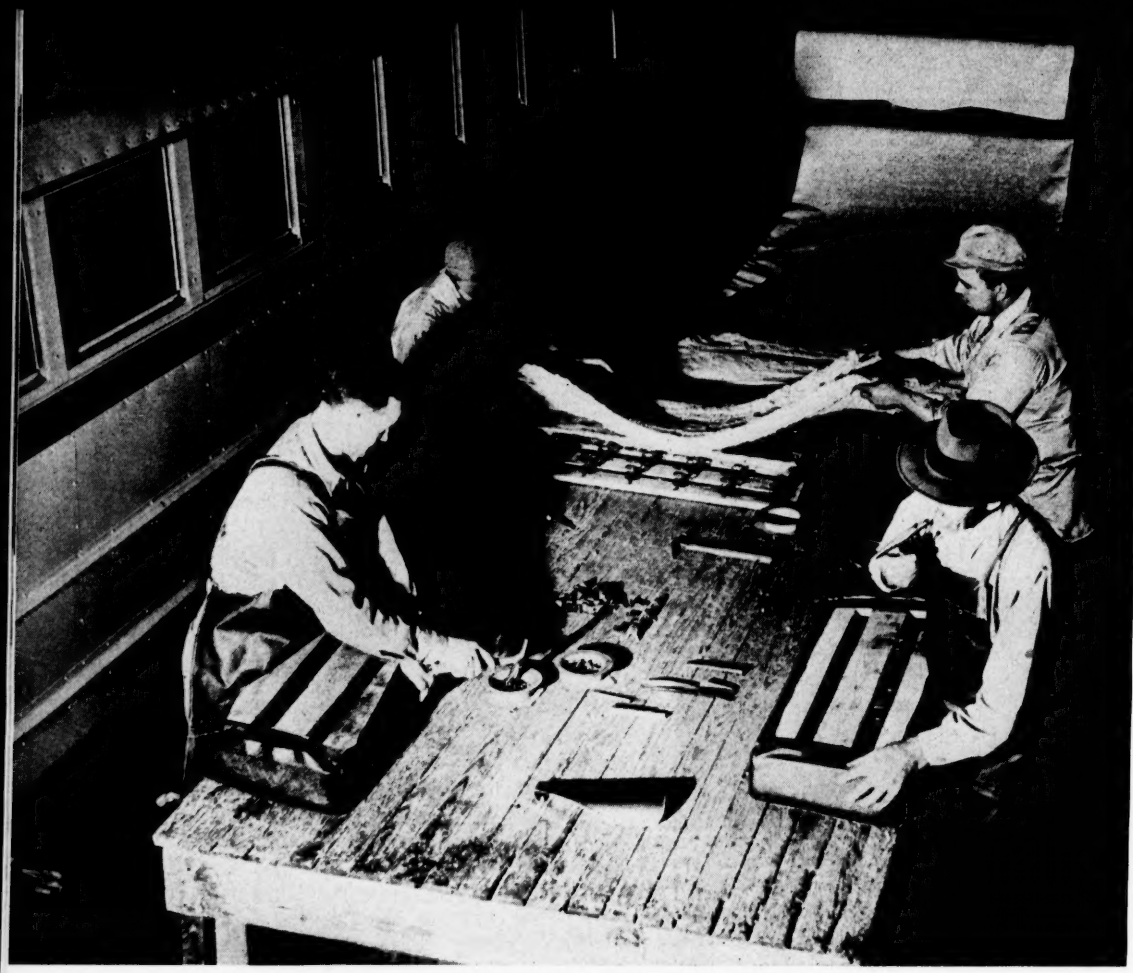
Arkansans who got into manufacturing during the war, those who learned new skills elsewhere in that period and men returning from the armed forces have entered this type of business on an increasing scale and are finding it easier to obtain local financial backing as the state has accumulated more capital available for investment in such enterprises.

This is really the crux of the combined program being carried on by the Arkansas Economic Council-State Chamber of Commerce, the Arkansas Resources and Development Commission and the Bureau of Research, University of Arkansas, to build a balanced economy for Arkansas independent of industry owned or controlled outside the state. This latter type of plant is sought and welcomed to Arkansas but emphasis in the postwar development planning has been laid on inducing Arkansas management to carry the processing of Arkansas resources further than it has

Above—Drying target faces made by silk screen process at Ben Pearson Co., Pine Bluff.

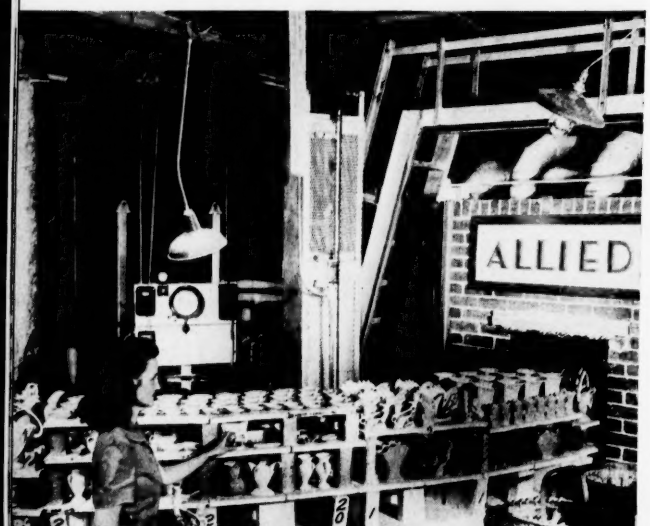
Circle—Hosiery mill at Jonesboro.

Below—Making women's garments at Ottenheimer Brothers plant, Little Rock.



Above—Final installation on school buses at Ward Body Works, Conway, Ark.

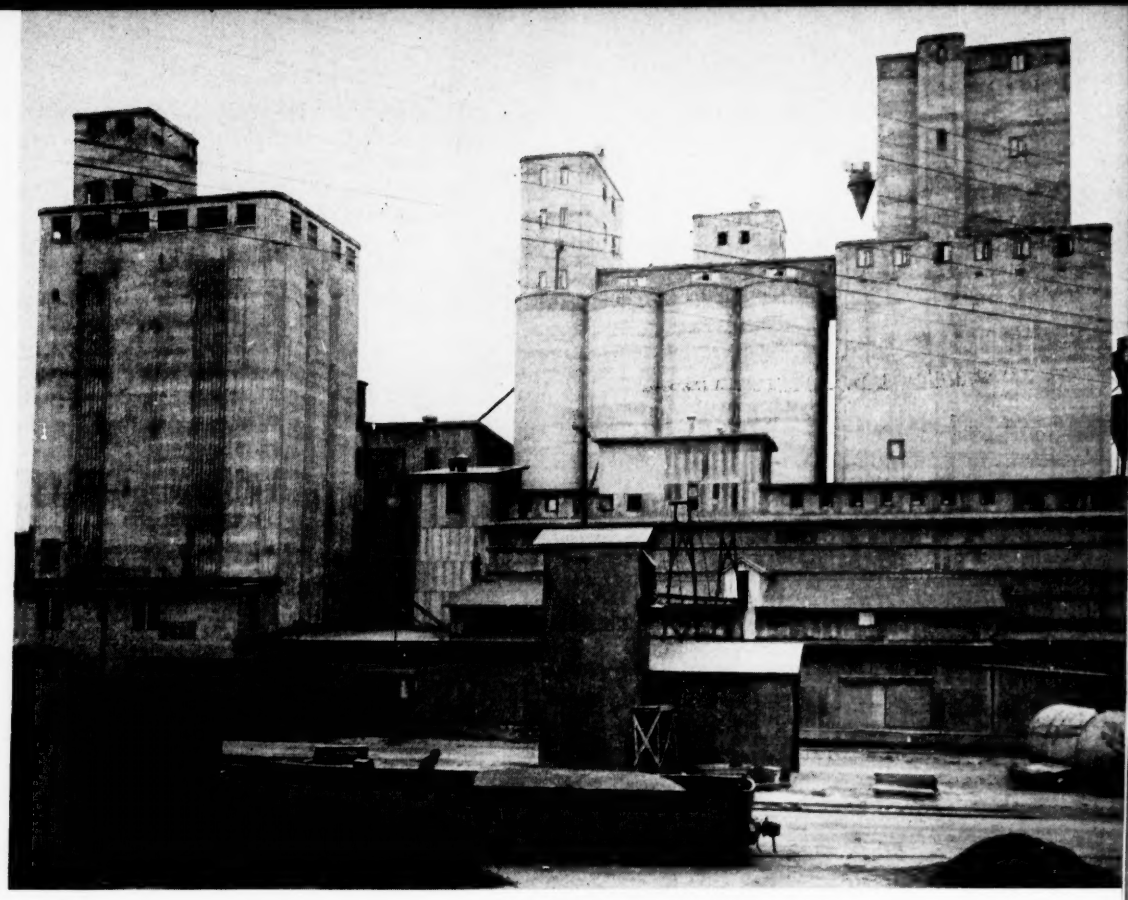
Below—Pottery manufacture.



in the past and the results being obtained led Dr. Paul Chapman, dean of the College of Agriculture, University of Georgia, to remark recently that Arkansas had done more toward the industrial processing of its agricultural production than possibly any other Southern state.

How did this new spirit of energy and development activity arise in a state that had not done too much with its rich resources in the past? It had its inception during the war years in formation by business men from all over Arkansas of the Arkansas Economic Council. This organization, spearheaded by its president, dynamic C. Hamilton Moses who is also president of Arkansas Power & Light Company, provided the initial impetus. When Governor Ben T. Laney of Camden took office in January, 1945, he immediately threw the weight of state government behind the movement and it has mushroomed in interest and effectiveness since.

In 1943, a statewide meeting of business men was held in Little Rock. Production was booming, war plants were employing thousands, the capital city was thronged with troops from nearby Camp Robinson, new factories were springing up over the state to make articles useful in the war effort. And these business men decided that some organization should be set up to seek postwar retention of this new industry, to stimulate the trend of manufacturing toward



Above—Largest Rice mill in the world at Stuttgart, Ark.

the Southwest and to insure that Arkansas men and women, returning from military service, should have jobs waiting for them when they got home.

With Mr. Moses at its head, the Economic Council thus formed set about organizing county units with a progressive, active chairman in each of the state's 75 counties. Seventeen statewide committees were appointed—dealing with such subjects as Forestry and Wood Products, War Plant Reconversion, Manufacturing, Recreation, Water Utilization and Flood Control—and a determined effort made to awaken each town in Arkansas to the opportunities before it and the urgency of the task.

Upon organization nationally of the Committee for Economic Development, the Arkansas Economic Council undertook the CED program in Arkansas and under the state chairmanship of W. M. Shepherd of Pine Bluff made an outstanding record in this work.

Early in 1945, the Economic Council was merged with the Arkansas State Chamber of Commerce and simultaneously, the Arkansas Legislature set up, under Governor Laney's urging, the Arkansas Resources and Development Commission which absorbed independent state agencies dealing with Agriculture and Industry, Forestry and Parks, Geology, Publicity, Flood Control and Soil Conservation, and Planning. Work of this commission under Chairman B. T. Fooks of Camden has been so successful that the 1947 Legislature more than quadrupled its appropriation, giving the commission well over $1,000,000 including sub-

Below—Making baseball bats at Little Rock.

stantial sums for extension for forest fire protection services and state park improvement.

The same 1945 Legislature also placed the University's Bureau of Research, under Dr. C. O. Brannen, on a more solid basis, allotting it $100,000, a sum which was also increased in the 1947 legislative budget. The Bureau's staff was expanded, a building erected and assembling of equipment begun.

As the outgrowth of a series of staff meetings, it was decided to coordinate work of the Council-State Chamber, the R. & D. Commission and Bureau of Research. Meetings were held jointly throughout the state, programs discussed at staff conferences and publications distributed on a cooperative basis. Mr. Moses stumped the state, addressing gatherings of business men in 60 counties, urging them to seek new industries based on locally abundant resources.

The Economic Council-State Chamber made labor surveys, issued small business specification sheets, community survey manuals and forms, helped organize local chambers of commerce and worked with the communities in developing industrial prospects.

The Resources and Development Commission also has worked at the community level, employing industrial engineers to assist local industrial developments. Through its Washington office, outstate corporations have been introduced to Arkansas. It increased markedly the number of soil conservation districts in Arkansas, worked for better publicity for the state, promoted utilization of native minerals.

Established with the idea that research should be useful to industry, the University's Bureau set up industrial pilot plants to study costs and methods in crop processing, began a study of Arkansas coal, undertook wood research, and an extensive study of markets for Arkansas products with a view to determining which might be more extensively processed within the state. For example, a study nearing completion will point to the possibilities in further processing of vegetable oils in this state, one of the large producers of cotton and soybean oil. Experts have also been lent to Arkansas industries to work on specific projects.

Recently the Arkansas Power & Light Company has established an Industrial Development Department headed by Mr. Shepherd and this organization has joined with the others in the general program.

The power company has just initiated its "Make Our Company Best" program under which a sum placed at $54,000,000 will be spent for expansions and improvements. Plans include expenditure of $23,000,000 during the first two years. One of the major projects is completion of the huge Lake Catherine steam-electric power plant at the Jones Mill aluminum reduction plant near Hot Springs. To be one of the largest in the South, the plant will have a generating capacity of 80,000-kilowatt-hours, and its completion will cost in the neighborhood of $10,000,000. Arkansas Power & Light Co. has also contracted with Reynolds Metals Co., which has leased the aluminum plant, to supply power for manufacture of aluminum from Arkansas bauxite.

Through its extensive connections with business men in all sections of the state, the Economic Council-State Chamber has endeavored constantly to hammer home the thought that in the last analysis, only community action can be effective in building up Arkansas industrially, in providing new wealth through off-the-farm jobs in manufacturing and the service trades, in obtaining the improvements that make towns more attractive and better places in which to live.

That the combined efforts of these organizations have met with success may be seen in the organization or reactivation during the past two years of no fewer than 20 local Chambers of Commerce, many of whom have employed full-time secretaries, in the formation of nearly two dozen Industrial Development Corporations for the purpose of securing new plants. These local non-profit corporations have provided industrial buildings for a number of concerns locating in Arkansas, either on a basis of full cost amortization or nominal rentals.

At the end of three years of this sort of effort, Arkansas business men know more about their state's resources than they have ever known and alert, awakened communities are vying keenly with each other for new industries.

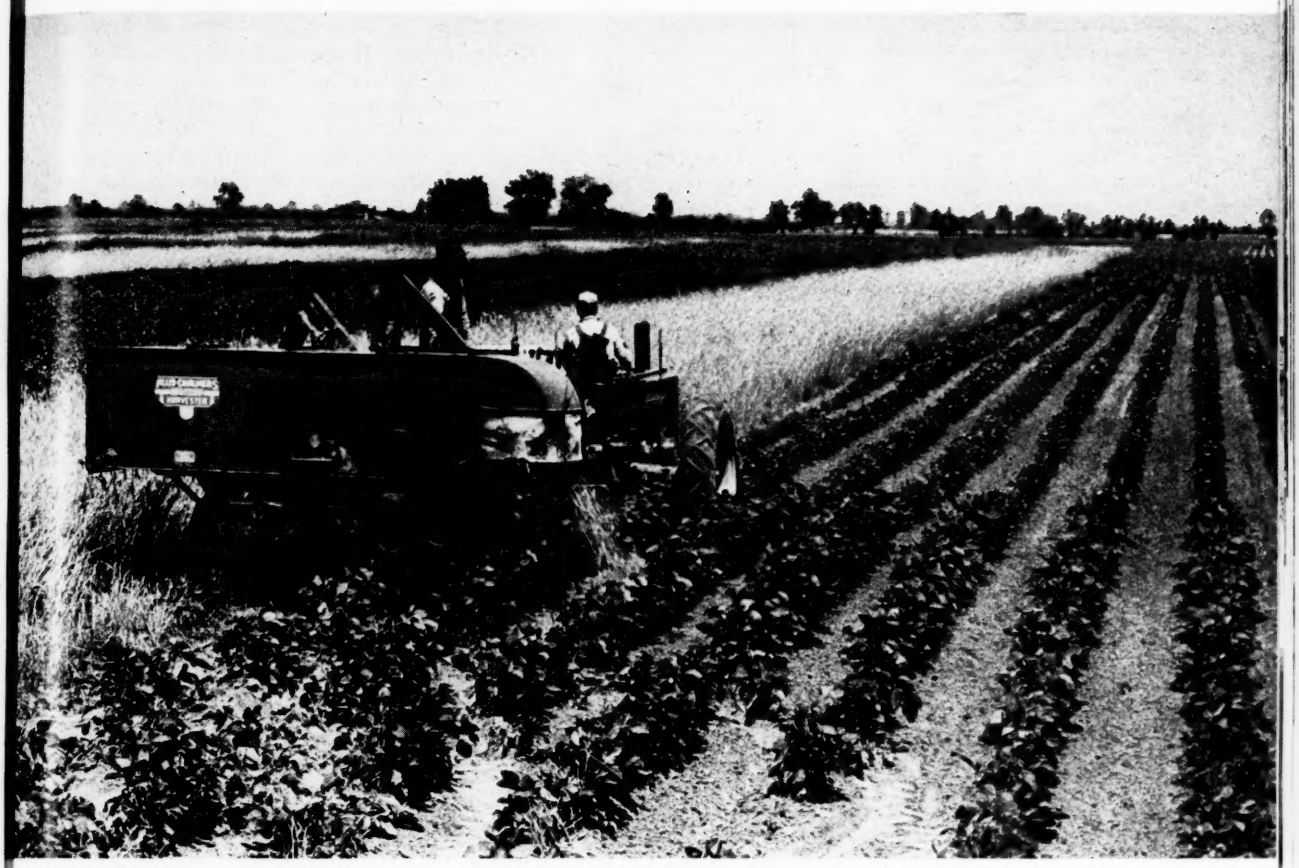
Typical of the new economic order in Arkansas is Minnesota Mining & Manufacturing Company's recently completed $3,000,000 roofing granule plant in Little Rock, Root Petroleum Company's big new 100-octane gasoline refinery at El Dorado, the $1,000,000 sulphuric acid plant to be built in North Little Rock by Southern Acid & Sulphur Corp., Diamond Alkali's chlorine plant at the Pine Bluff arsenal, as well as such other plants as the new International Shoe plant just opened at Conway where 450 to 500 workers will ultimately be employed, and the big Westinghouse lamp plant project at Little Rock.

The new roofing granule plant at Little Rock employs 150 men, all but seven of whom were hired in the vicinity of that city, thus showing how establishment of a large industrial plant benefits the people of a locality by providing jobs as well as bringing money into local business coffers with purchase of materials and supplies. First shipments were made from the plant in April. The granules are used on a number of asphalt roofings which are said to withstand severe weather conditions. Enough granules will be produced in a year to cover 1,200,000 houses a year.

But also giving Arkansans great satisfaction are the smaller plants of such concerns as Nimrod Inc., which is working on orders for thousands of plywood fishing boats, the new $100,000 pickle factory at Atkins, Forrest City's new furniture factory just getting into production and the brand-new year round canneries, such as Canners Inc., have built at Clarksville.

The solid returns to Arkansas are reflected in the state's payment of more than $100,000,000 in federal taxes last year, the swelling of its state tax yields to $65,000,000, the big increase in telephones, life insurance sales, building permits and other indices.

Arkansas has bettered its lot economically since 1940 to a considerably greater degree than has the nation as a whole and that feat has been accomplished by the hard work and constructive energy of its own people.



Above—Strip cropping to control wind erosion in northeastern Arkansas. Strips of small grain are planted in early spring and soybeans, cotton or some other crop is planted between these strips. The small grain is shown being harvested. Corn or some other late crop will be planted.

AGRICULTURE

Cattle are grazing in many former cotton fields in Arkansas and in others vegetables, fruits, legumes and small grains thrive. Arkansas has held its high place among leading cotton producers of the nation but a significant change has occurred in its agricultural pattern. The western half of the state has gone out of the cotton producing business.

Farmers are keeping pace with industrialists as Arkansas moves ahead in the field of production. Modern machinery and methods, here as in the rest of the country, make farming a more efficient enterprise. The mule drawn plow is being replaced by the tractor, and flame cultivators kill weeds which formerly waited for the hoe. Airplanes spread seed, insecticide and fertilizer quickly over countless acres of rice or cotton.

But the principal change in Arkansas agriculture is more far-reaching than mere modernization. It is the movement of cotton from out of the hill sections of the state and its concentration in the delta areas. Arkansas is producing as much cotton as ever but only about half as much land is required to grow it as was used for the crop 15 years ago. Per-acre yields have doubled because of use of better adapted varieties, more suitable fertilizer and more efficient cultivation methods.

Twenty years ago cotton grew on almost every farm in the state and the average yield was about 175 pounds of lint per acre. The western half of the state, which includes the Ozark and Ouachita mountains and their foothills, then produced as much cotton as the eastern part.

Left—Modern farm home built on natural stone in the Fourche Valley of the Nimrod dam area.

Now about 90 per cent of the state's cotton crop is grown in the eastern half of the state where level lands reduce the hazards of erosion and encourage the use of machinery. The average yield for the state is now about 365 pounds per acre. And even in the delta, cotton acreage has been reduced. Farmers are growing alfalfa, corn, soybeans, oats and hay in diversified farming programs.

Year-round pastures now cover many former cotton fields and the livestock industry has become one of the most important sources of income for Arkansas farmers. In 1945, 41 per cent of the state's income from farm marketing came from the sale of livestock and livestock products. Twenty years earlier only 12 per cent of the farmer's cash came from this source.

Beef cattle, dairy cattle, hogs, poultry and eggs all share in this increase. Much of the state is well suited for sheep raising and in these areas wool and spring lambs contribute substantially to the farm income. Beef cattle numbers have been increasing since 1936. Commercial production of broilers has grown into an important industry in northwest Arkansas in the last 15 years.

Increasing emphasis is being placed on feed production, especially pasture improvement and the growing of hay and silage. For Arkansas is not yet self sufficient in the livestock business—its animals require about $18 million dollars of feed from other states each year. Bankers and civic bodies have joined the Extension Service of the University of Arkansas College of Agriculture in promoting pasture contests to insure the permanency of the dairy and beef cattle programs regardless of what happens to the feed price ratio. When the proper combination of pasture plants are grown and good management is practiced Arkansas pastures will provide grazing practically the year around. Winter cover crops are grown extensively to provide livestock feed and to reduce erosion during the winter months. Last year's winter grain and legume crop was 200,000 acres greater than the state had ever grown before and a hay crop of 1,615,000 bales set a new record.

Dairying now brings Arkansas an annual cash income of almost $25,000,000. Approximately 500,000 cows produce 1½ billion pounds of milk each year but the demand for dairy products still exceeds the supply. In addition to fresh milk, the state's dairy products include 6,417,000 pounds of creamery but-

Circle—Picking Arkansas strawberries.

Below—Modern Arkansas cattle herd.

Above—Harvesting apples in Arkansas, where the yearly crop approximates 625,000 bushels and includes such varieties as Ada Red, Transparent, Jonathan and Delicious.

Right—Cotton in a Mississippi County field, Arkansas.

ter, 7,812,000 pounds of cheddar cheese and 2,774,000 gallons of ice cream. Milk production per cow is above the pre-war average.

Pork production is increasing, especially among farm families who are growing enough meat to supply their own needs. Ninety frozen food locker plants in the state provide modern facilities for the preservation of this meat. Feed supplies are being utilized to better advantage by growing higher type swine.

Cotton is still the state's major crop. Planters are constantly seeking new means of producing better cotton cheaper to meet competition of synthetics and foreign growers. Arkansas farmers are making good progress in improving the quality of their cotton. They are keeping step with the national program which urges: fit cotton into balanced farming, take care of your soil, get together on the best variety, make your labor count, control insects and diseases, pick and gin for high grade, and sell for grade, staple and variety value.

In 1937, the year before the cotton improvement program began, 60 per cent of Arkansas' cotton was shorter than one inch while in 1946 only 9.4 per cent

Above—Federal cotton compress and warehouse at West Memphis, Ark.

was under one-inch in staple length. Last year 94 per cent of the state's crop was within the 15/16 to 1 3/32-inch length, a classification which only 80 per cent of all American grown cotton attained.

Use of improved varieties is also increasing. In 1938, 2,973 farmers were members of quality improvement groups and planted 60,744 acres to adapted varieties. In 1946, 14,935 members planted 885,254 acres to adapted varieties. Cross-cultivation is reducing the labor required to grow a cotton crop. The Extension Service reports more than 62,000 acres were cross-cultivated in 1946 as compared to 40,000 the preceding year. Flame cultivators, mechanical cotton pickers and other machinery are replacing hand labor on many of the larger plantations.

Fifteen million bushels of rice were grown in Arkansas last year. New driers, towering like giant silos in the flat rice country, make it possible to harvest the crop without the long drying in shocks in the fields, where it was subject to the ravages of blackbirds and winter weather. Improved varieties, de-

Above—Raising hogs at the Benton State Hospital.

Below—Arkansas Rice Harvest.

Above—Arkansas Sheep.

veloped by the Experiment Station of the University of Arkansas, make up the greater part of the state's production.

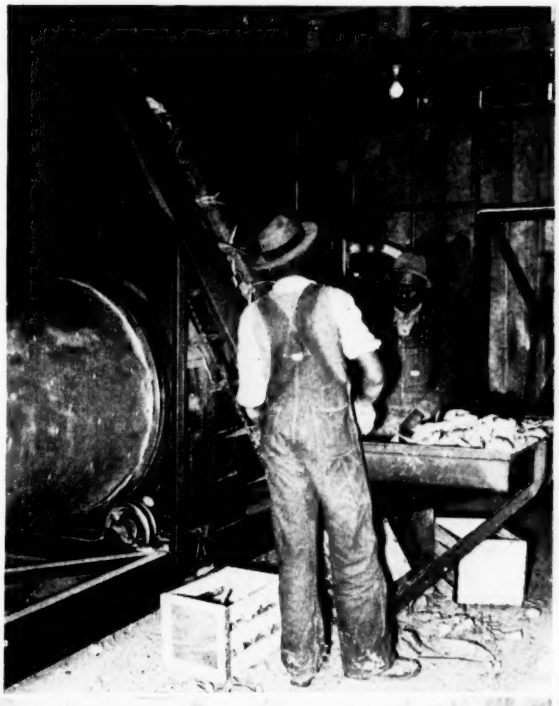
More than four million bushels of soybeans were grown last year, the largest crop on record although the acreage was smaller than in preceding years. Farmers used good varieties and improved cultural practices to obtain this yield. Hybrid corn has replaced the open pollinated kind on 40 per cent of the state's corn acreage.

Although corn remains the dominant feed produced in Arkansas, oats are becoming increasingly important as a source of feed. Oats provide as much feed as corn, may be grown at a lower production cost, are a more dependable producer and are better suited to a soil conservation program.

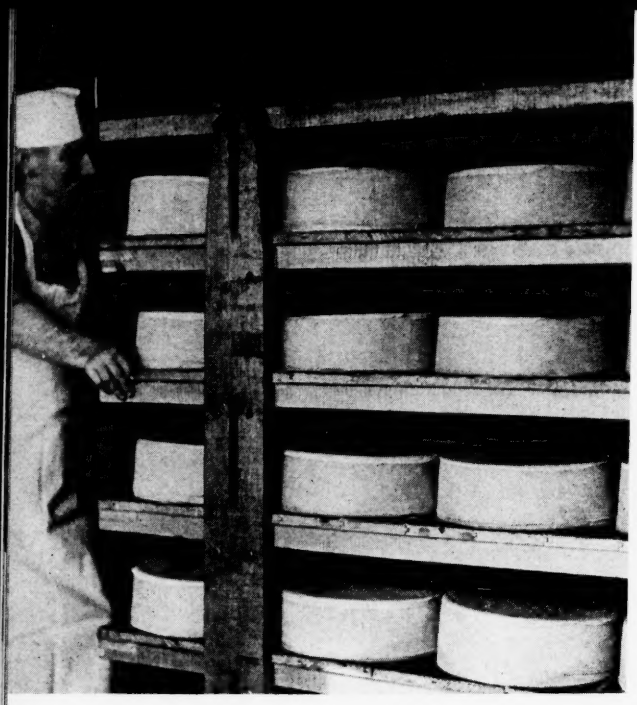
Arkansas is important as a fruit producing state. Apple orchards and grape vineyards cover large portions of the Ozark regions. Boysenberries, Youngberries and blackberries are also grown commercially.

Strawberry production is a major crop in at least one section of the state—the White county area which is second only to the Hammond, La., area as a straw-

Below—Sweet potato drying plant.



Below—A Hereford herd.



Left—Whole milk cheese from Arkansas.

berry producing center. This 2½ million dollar industry draws buyers from cities of the East and Mid-West to the little town of Bald Knob each year at harvest time. At the height of the strawberry season refrigerator cars and trucks jam the railroad yards waiting to be loaded with fresh fruit as the buyers compete with each other to bid it in.

More peaches from fewer trees proves that Arkansas orchardists are doing a better production job. Cover crops, insect control and other good cultural practices have increased yields 66 per cent in the last decade while the number of trees has declined 16 per cent. This means that the average peach tree in the state now yields twice as much fruit as it did ten years ago. In 1939 a few hundred acres of cover crops proved the value of this practice and by 1946 about 25,000 acres of peach orchards were seeded to winter legumes. Peach production in the state now totals about 2,800,000 bushels annually.

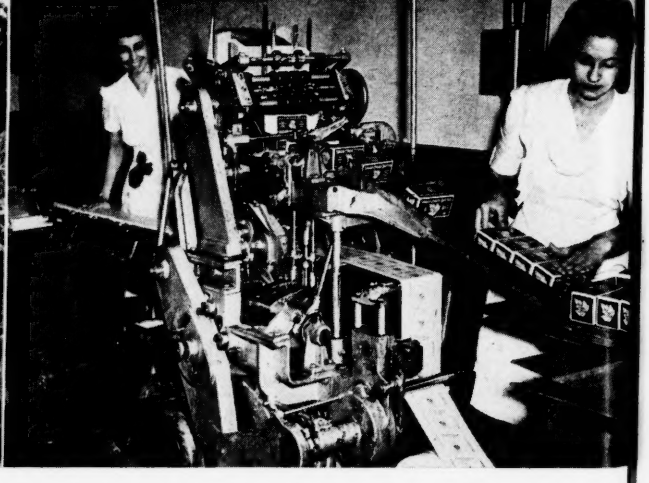
Trial plantings of head lettuce, cauliflower, broccoli, celery and asparagus are being encouraged by the University of Arkansas in an effort to produce vegetables which will get a preferred position on the market. A study of production areas and their marketing seasons has shown that these crops can be brought on the market at times when production from present major producing areas is low. New improved varieties are being adopted as demonstrations show their value.

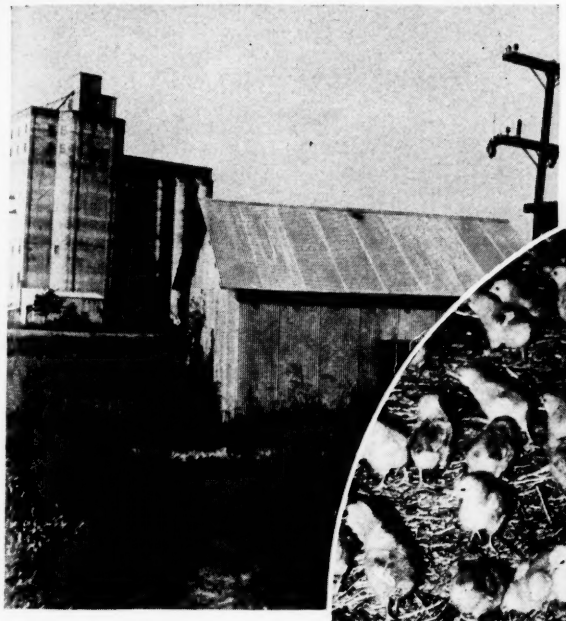
Arkansas is divided into three major agricultural areas. Differences in soil and climatic conditions cause a wide variation in the farm enterprises of these areas.

The upland area, into which about half of the state is classified, includes the Ozark and Ouachita mountains. This land is subject to serious erosion unless

Below—Arkansas grazing lands.

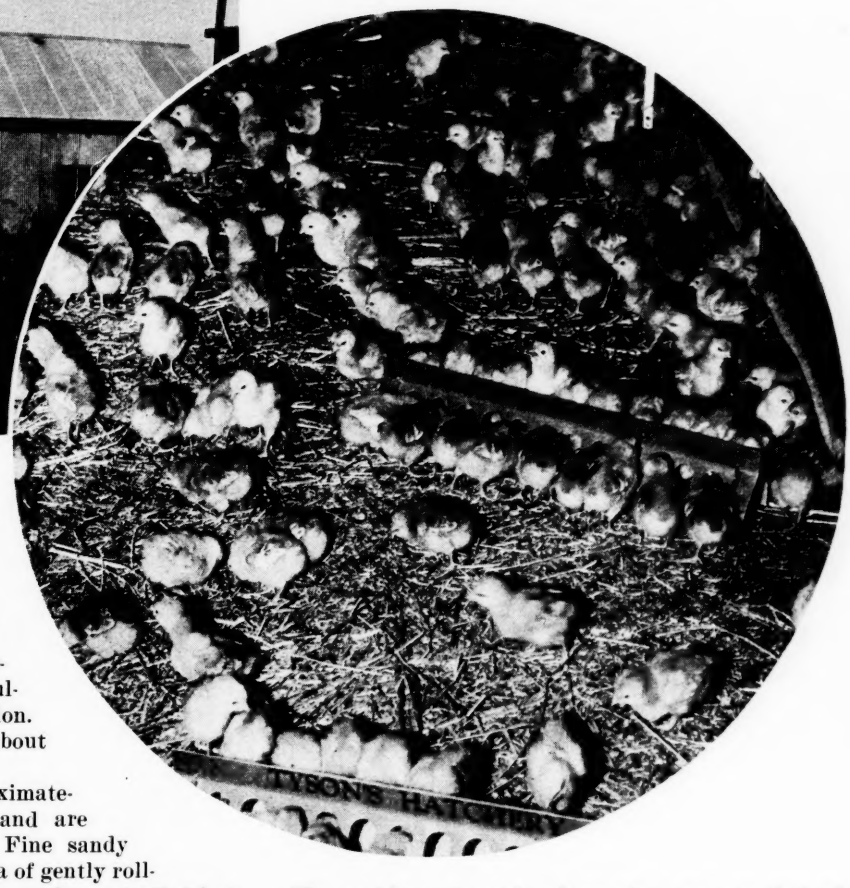
Below—Left—Sorghum. Right—Modern dairy plant operated at Russellville. Many such plants are located in Arkansas.





Left—Rice Drier at Jonesboro.

Circle—Chicks at Tyson's Hatchery.

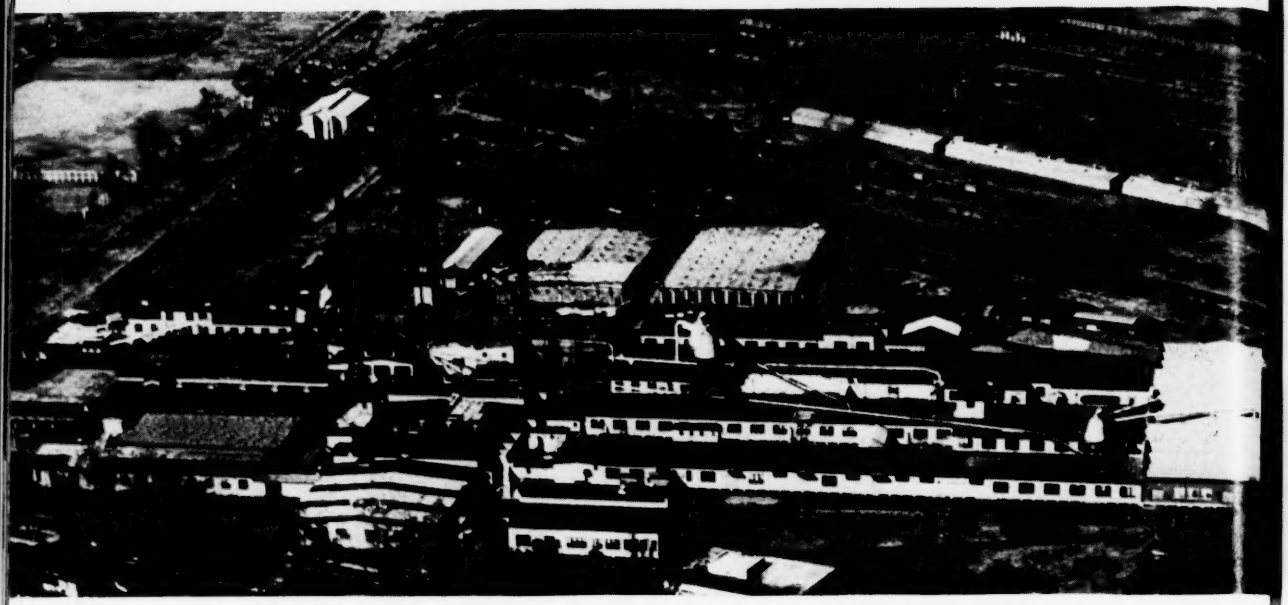


proper cropping practices are followed. Except for some bottom lands it is not generally suited to row crops. Livestock, hay, small grains, fruit and vegetable production are the major agricultural enterprises in this section. Farms in this area average about 110 acres.

Coastal plains cover approximately one-fourth of the state and are located in south Arkansas. Fine sandy loams predominate in this area of gently rolling lands. Erosion here, too, must be controlled but the land responds well to good practices. The agriculture of this area is made up generally of family-sized cotton farms, averaging 80 to 100 acres, with some fruit and vegetable farms. Corn, hay, oats, sweet potatoes, peanuts, fruits and vegetables are grown and, as in the upland regions, timber is important.

The delta consists of the fertile alluvial soils which lie along the Mississippi, Arkansas and Red rivers. The problem of erosion here gives way to that of drainage and flood control. The rice area, in the east and central parts of the state, is made up of silt and clay soils with an impervious subsoil. Farms in this area are relatively large, averaging about 150 acres. Large farms are necessary for the efficient use of heavy machinery and water needed in rice production. The cotton area is made up of clay and clay-loam soils.

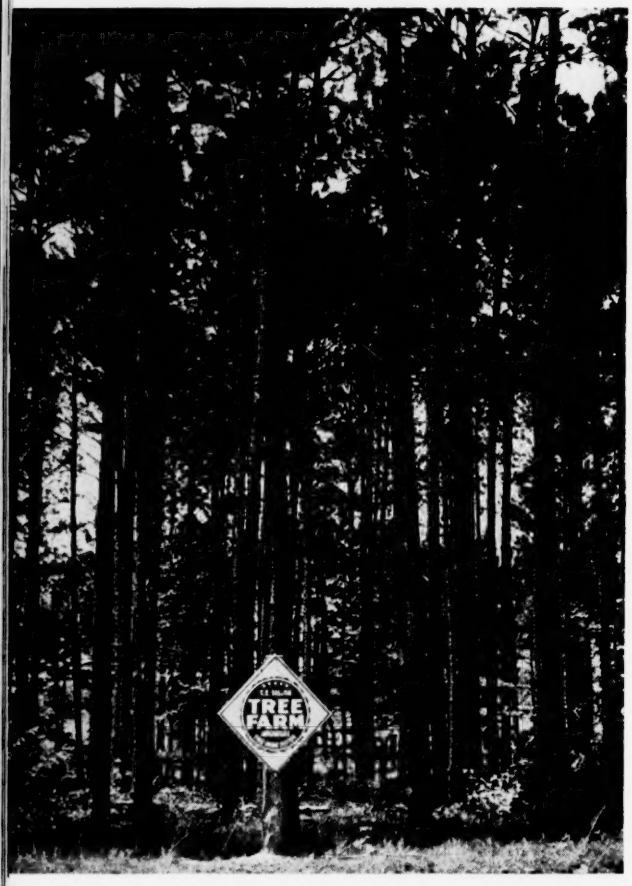
Bottom—A Benton poultry farm.



Above—Poinsett Lumber and Manufacturing plant, subsidiary of widely known sewing machine manufacturer.

FORESTS

Below—Modern Tree Farming is practiced in Arkansas forests.



With the advent of the first sawmill at Helena, some 110 years ago, the forests of Arkansas started to take a major role in the state's industrial progress. For many years now, they have not only supplied the raw materials for one of the most important industries, but have also afforded posts, poles and fuel for over two hundred thousand farmers.

Drain has been heavy on this bountiful gift of nature, but, in the case of Arkansas, not to the point of utter depletion as has occurred in so many states of the nation. Over 60 per cent of the state's area, some 20,053,000 acres, is still covered with some form of forest growth, large portions of which are virgin timber. This is despite the fact that Arkansas ranked fifth among Southern states in 1945 in lumber production.

This commendable combination of production and conservation can be traced to the dual efforts of the lumber industry and state forestry supervision. The forest conservation project at Crossett has gained nationwide recognition as one of the most scientific approaches yet developed for the ever-growing forestry problem that faces the entire country.

The fundamental principle of this project is to maintain and increase forest growth at the same time that production is kept under full headway. This principle is largely responsible for the fact that the state's 1,439 sawmills steadily produce about 1.6 billion board feet per year. Another 300 million feet goes into cooperage, handles, veneers, and plywoods.

Annual production is rounded out with 800 thousand cords of pulp and chemical wood, some two and a half million crossties, 38 million fence posts, 100,000 poles and piling pieces, and about two million cords of fuel wood.

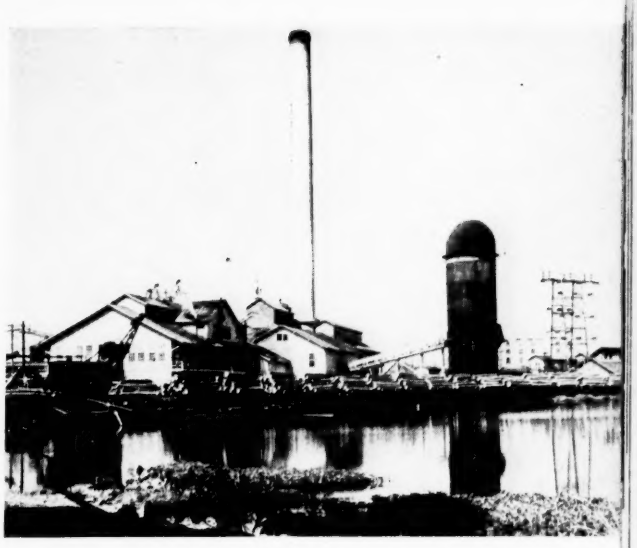
With all this production turned out each year, there are still left standing seven and a half billion cubic feet of sawtimber and over six billion cubic feet of pole timber.

Experience has taught Arkansans that timber grows like a crop and therefore should be harvested as scientifically as any other crop; that the excellent soils of the state are especially conducive to forest growth; that forests, to attain maximum production, must be vigilantly protected and skilfully managed.

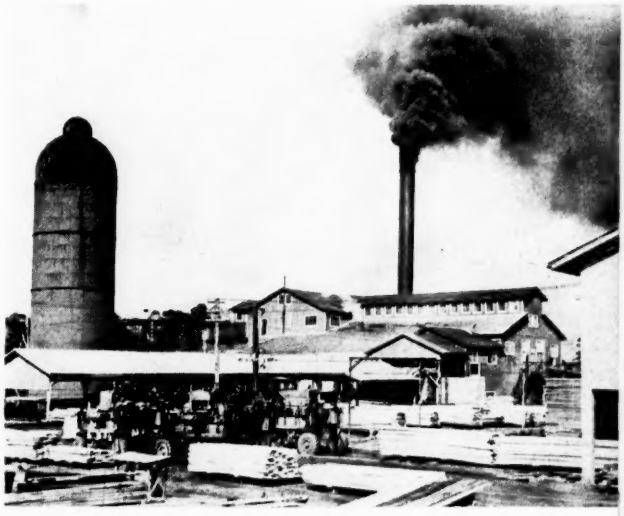
The results of application of such knowledge is illustrated by an incident that occurred in the recent past at Crossett. A group of forestry experts were inspecting the saw logs that were being fed into the huge Crossett mill. A particularly fine butt log was halted for inspection, and one of the onlookers called attention to the even and widely spaced growth rings that occur only in fully matured timber. Reference to the pedigree of the tree from which the log had been cut revealed the interesting fact that the tree was one that had been planted after the Crossett project was put under way. Further inquiry disclosed that what was true of that one log was true of many others—that a considerable amount of the current cut had been grown from seedling to maturity since the operation started.

Timber owners and operators, large and small, are now adhering to the timber cropping methods initiated at Crossett, and nature is lending full cooperation. Coupled with its timber growing soil, Arkansas enjoys a climate that makes for a long growing season. Ample rainfall makes the soils of the alluvial flood plains of West Arkansas a natural environment for the production of loblolly and shortleaf pines, intermixed with oak, gum, hickory and other hardwoods in varying proportions. In the Mississippi flood plains to the east, growth is even more diversified, with less pine and more hardwood. There, is to be found a luxuriant assembly of cypress, cottonwood, gum, oak, hackberry, pecan, elm, ash, and hickory.

From the Ozark mountain region of Northwest Arkansas comes what its growers are pleased to call the flavoring agent for Kentucky Bourbon whiskey. In that region are produced the white oak staves that go to make up the kegs and barrels in which a vast quantity of the beverage is aged and which are said



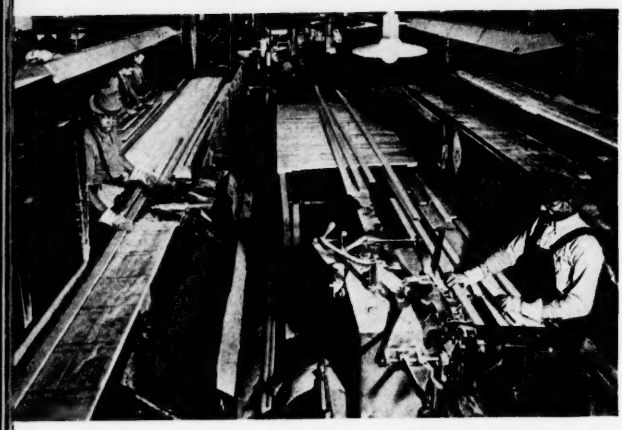
Above—Big Crossett sawmill, showing chemical plant stillhouse at right center.



Above—Southern lumber plant at Warren, Ark.

Below—Paper and pulp plant at Crossett, Ark.

XUM



Above—Manufacture of strip hardwood flooring at Little Rock.

to contribute strongly to its flavor. Also found in the region are red oak, gum, hickory, ash and cedar. While tree growth is somewhat slower in this section, by reason of the thinner nature of mountain soil, forest growth is making substantial progress, with recently planted seedlings showing unusually robust development.

Aside from those parts of the state that are forested with the primary purpose of supplying materials for woodworking industries, many acres of woodland are scattered widely over farms throughout the state. Almost as great a possibility is envisaged for these modest patches as for the solidly forested areas, albeit their benefits may be of a somewhat different nature. They offer excellent opportunity for enhancing farm income.

Farmers of Arkansas realize that their cash incomes should be increased. Although such incomes, over the past five years, have jumped nearly 300 per cent, farmers see room for still further improvement when comparison is made with other incomes in other parts of the country. Since farm woodland improvement and cultivation will contribute to the timber industry and at the same time increase over-all farm productivity, Arkansas farmers are giving more and more attention to development of this phase of their economy.

One minor difficulty, traditional rather than serious, still must be settled before the pursuit of this objective can be brought to full fruition. For generations back, annual "burning" of woodlands has been a practice, if not an actual rite.

Prevention of wasteful burning practices is fast being accomplished through the efforts of the Arkansas Forestry Commission which was established in 1933. This agency has provided modern protective apparatus. Included in its system are 91 lookout towers, over 4,000 miles of telephone lines, and adequate fire fighting equipment. A model fire law has been put into effect, and an alert fire fighting force has not only succeeded in subduing the most devastating fires, but through its example has brought second and more mature thought to those who were accustomed to fire their lands without full comprehension of the consequences.

The past year saw this phase of forestry control intensified. Before adjournment the State Legislature authorized at the suggestion of the Governor, largely increased appropriations for forestry control. Expenditure of the sums authorized will permit the Resources and Development Commission, successor to the Forestry Commission, to expand operations to such an extent that the entire state may be benefited by protective apparatus that heretofore has existed only in the chief forestry regions.

Indirectly, this development should wield a wholesome effect over the entire economy of the state. More farmers will be encouraged to go into the tree-growing business. This will not only in time add to actual cash income but will help take up the slack that is certain to come in employment by reason of farm mechanization. In other words it is apt to add a new job to the farming business.

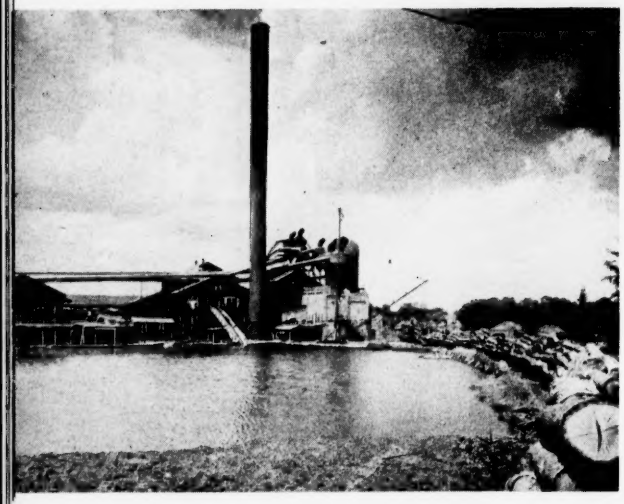
It has long been recognized that what helps the agricultural interests of the South or nation likewise helps the entire economy. Thus the timber industry of Arkansas, with all its evcellent performances of the past, may now be entering a period in which it will add new laurels to those it has been so justly accorded in years gone by.

One of the most encouraging features of Arkansas forestation prospects is the excellence of the second-growth timber in the state.

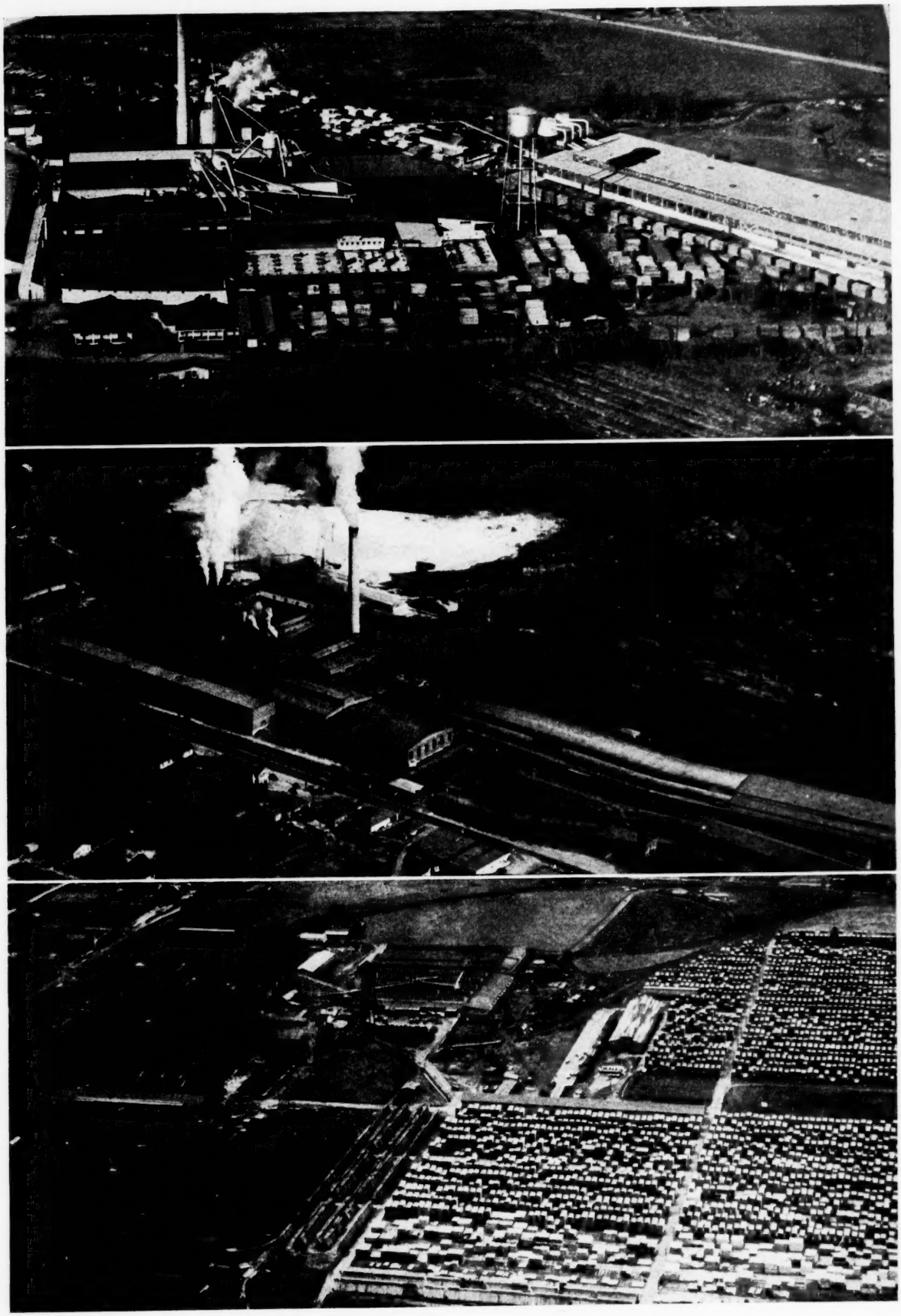
With virgin timber such as existed when white men first visited America definitely to become a thing of the past in the not too distant future, the reliance of the nation for future timber supply must be placed on new or second growth trees.

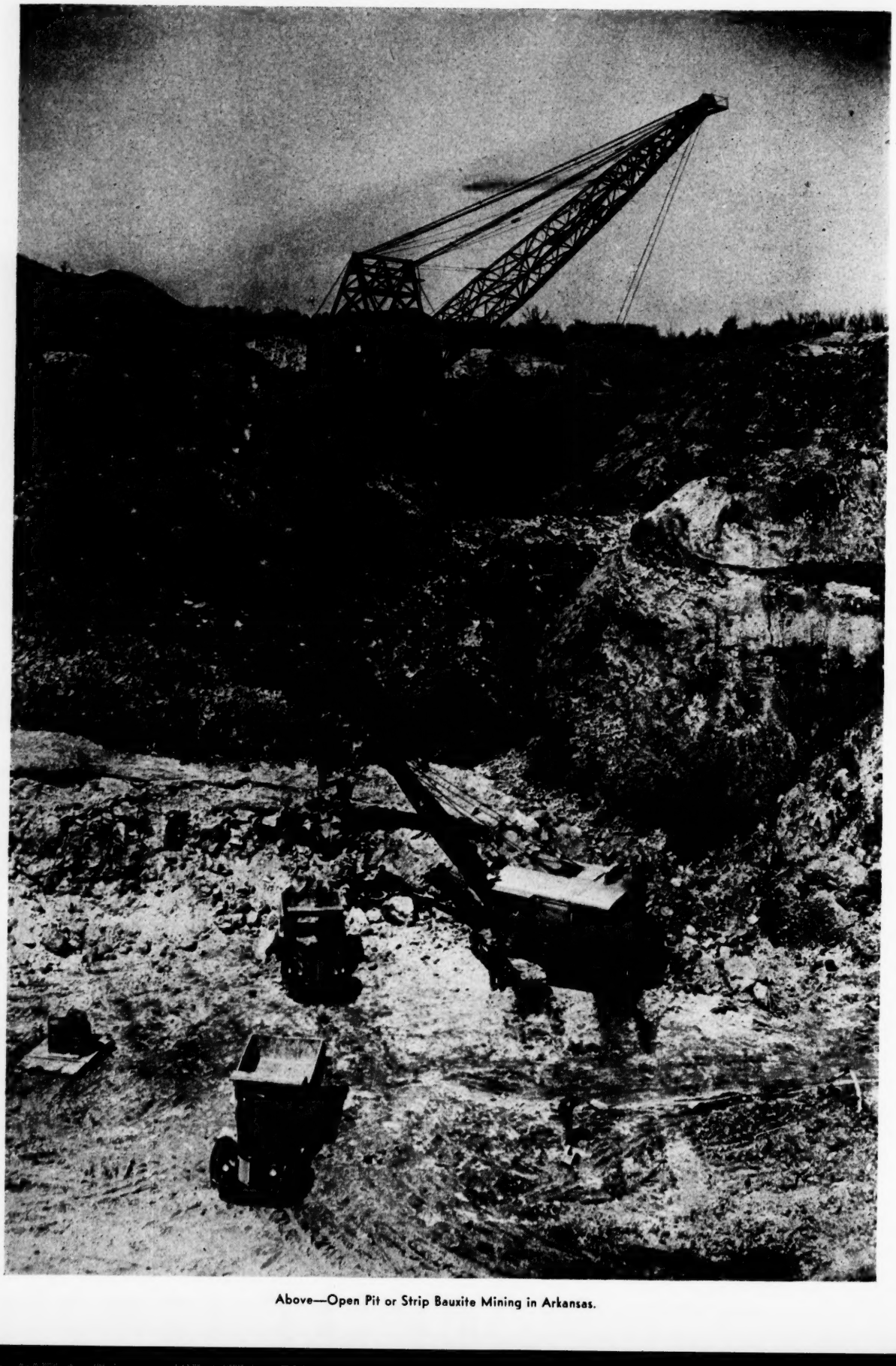
Many second growth logs that come to the mills to be sawed are indistinguishable from those of virgin stock, and it may well be that the scientific methods employed by Arkansas timber croppers add just the touch needed to urge nature on to a better job.

Below—Bradley sawmill and power plant at Warren, Ark.



Opposite Page—Top—Pekin Wood Products Co., largest wood parts manufacturing plant in the South at West Helena, Ark. Middle—International Paper Mill at Camden. Bottom—World's largest box factory.





Above—Open Pit or Strip Bauxite Mining in Arkansas.

MINERALS

Arkansas possesses valuable mineral deposits. For many years it has been a heavy producer of the fuel minerals—petroleum, coal and natural gas. In recent years, moreover, increasing production of non-fuel minerals has been contributing a steadily growing share to the economic wellbeing of the state. In 1946, fuels accounted for 78 per cent of total mineral production; the remaining 22 per cent being made up of metallic and non-metallic minerals.

Ranking now 26th among the states in value of minerals produced, production is definitely on the uptrend, having risen from $29 million in 1939 to $65 million in 1946.

Long an exporter of mineral raw materials, the state now can claim to be an important processor of these natural resources as well. Among other processed minerals, metallic aluminum is being turned out at the huge Jones Mill reduction plant, and barite is being processed into drilling mud at two modern plants near Malvern.

In recent years new applications have been developed for a wide variety of minerals, of which a striking example is perceivable in the barite development. Substantial deposits of this mineral were known to exist for a number of years, as though awaiting the discovery that would prove them to be a useful agent in the vast petroleum industry of the Southwest.

Among other important applications to which extensive deposits have been put are the $3 million plant near Little Rock which manufactures roofing granules from native syenite, and the rock wool plant now under construction in Texarkana.

Other deposits await development. The rutile ore of the Magnet Cove area in Hot Spring County is recognized as a potential agent for use as welding rod coating. Tripoli deposits are numerous in the northwest part of the state, and in the Ouachita Mountains. Extensive clay deposits show particular promise for a number of purposes, some being of very high alumina content. The silica sand deposits of northern Arkansas also hold out great possibilities. In that field alone there is opportunity far greater than that being captured by the one plant operating in the area. The sand in this section is known to be especially desirable for glass manufacture, molding forms, and a wide variety of other uses.

High purity limestone occurs extensively along the bluffs of the White River in northern Arkansas. Use of this stone was increased recently with the opening of a quarry to furnish limestone for the Hurricane Creek alumina plant. Additional deposits of chemical grade stone are available in the same area.

In western Dallas and central Ouachita counties, large deposits of lignite occur. The many derivatives that recent technology has produced from lignite indicates that these deposits have strong potential value, particularly as sources of dyes and waxes.

Interest has also been aroused in the north

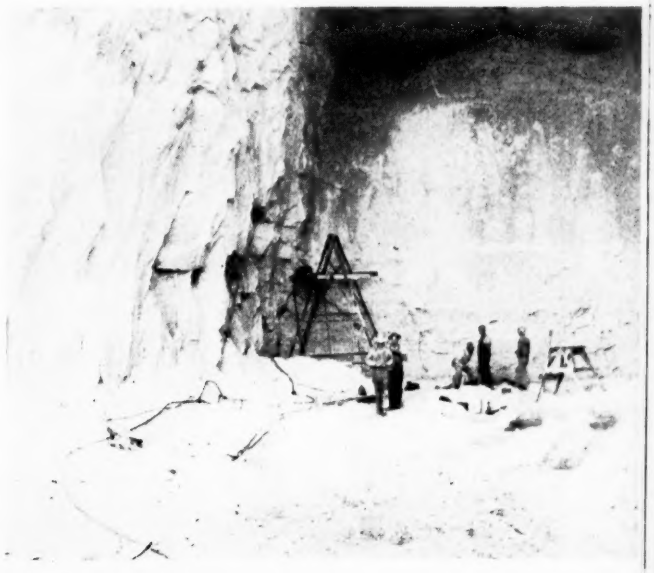
Above—Arkansas Coal.

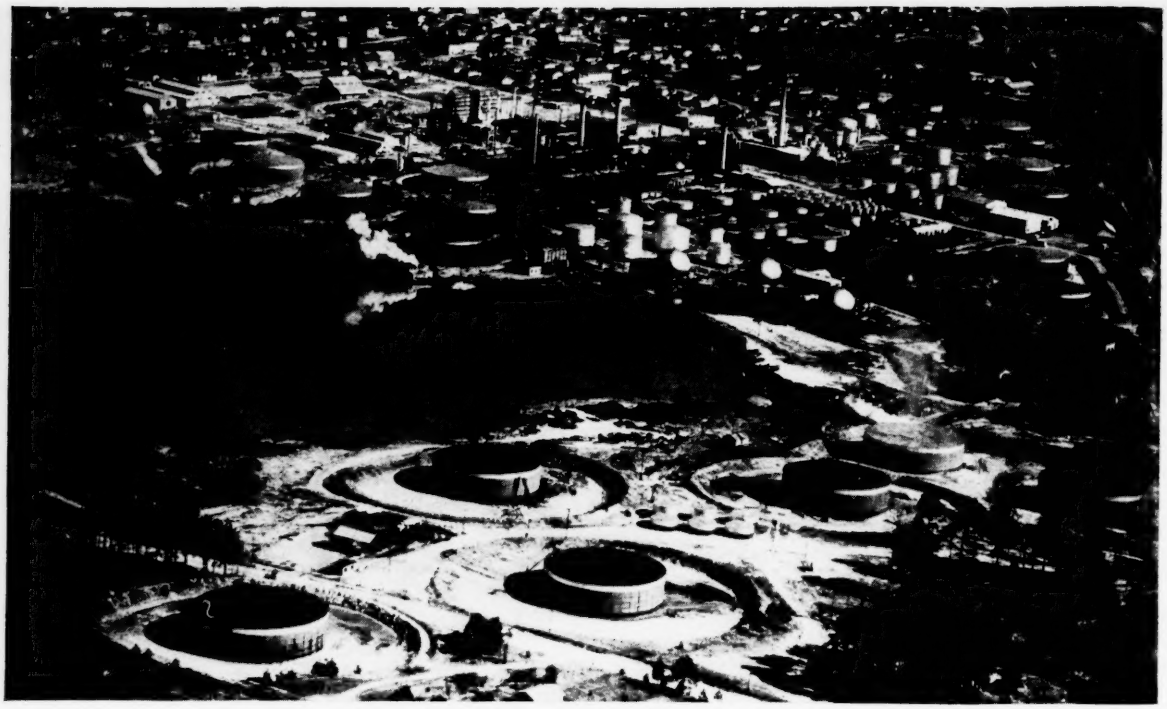
Arkansas lead and zinc deposits. With reserves of these metals dwindling in presently mined zones, and their demand increasing constantly in American industry, this interest grows stronger with the passage of time.

The foregoing minerals have been given first treatment here because of more recent development. They are, however, of far less present importance than the petroleum and bituminous resources of the state.

Arkansas ranks eighth among the oil producing states of the United States, based on total oil produced to date; at the end of 1946 the cumulative pro-

Below—Glass sand being mined in Arkansas.

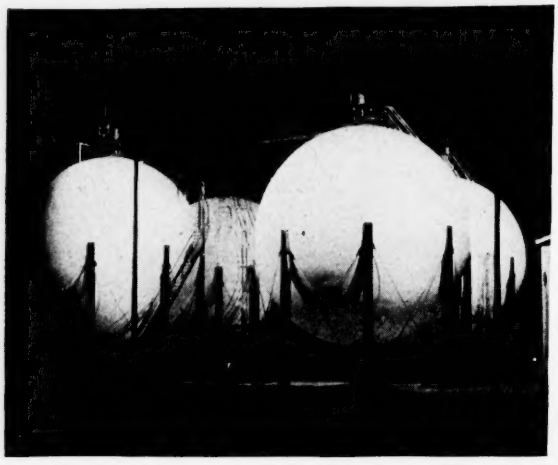




Above—Air view of 20,000-barrel daily capacity Lion refinery at El Dorado where a complete line of petroleum products includes high quality motor fuels, tractor distillates, gas oils, lubricating oils, asphalts and fuel oil.

duction was 693,539,585 barrels. The average daily oil production for 1946 was 77,797 barrels, tenth in the United States. Proved oil reserves on January 1, 1947 are estimated at 310,830,000 barrels, to be recovered by primary production methods. In addition, a recent survey just completed under the auspices of the Arkansas Oil and Gas Commission indicates a possible additional recovery by secondary recovery methods of 210,940,000 to 269,340,000 barrels of hydrocarbon liquid (oil, condensate and natural gasoline).

Below—Night view of 500-ton anhydrous ammonia storage spheres.



It is estimated that Arkansas had proved reserves of 871,662,000,000 cubic feet of gas on December 31, 1946. This places Arkansas in tenth place among gas producing states. Annual production for 1946 was 64,305,178,000 cubic feet, eleventh in the United States. The state ranks eighth in recoverable reserves of natural gas liquids in the United States.

It has been estimated that the annual value of all phases of the petroleum industry to the State of Arkansas exceeds $500,000,000. When consideration is given to the fact that more than 750,000 feet of hole are drilled each year, runs to refinery stills in the state averaged 40,902 barrels daily in 1946, over 200,000,000 gallons of gasoline are consumed annually in the state and that the revenue from gasoline tax sales exceeds $13,500,000 annually, some idea of the importance of the petroleum industry to the people of Arkansas is evident.

Gas was first discovered at Fort Smith, Sebastian County, in the year 1888. The first commercial gas production was discovered near the town of Mansfield, Sebastian County, in 1901. This well opened the Mansfield gas pool which in 1946 produced an estimated 36,000,000 cubic feet. Since discovery the northwest Arkansas gas producing area has produced a cumulative volume of 180,390,000,000 cubic feet, the production in 1946 being 3,655,178,000 cubic feet. All of the gas produced is used for light, fuel and drilling.

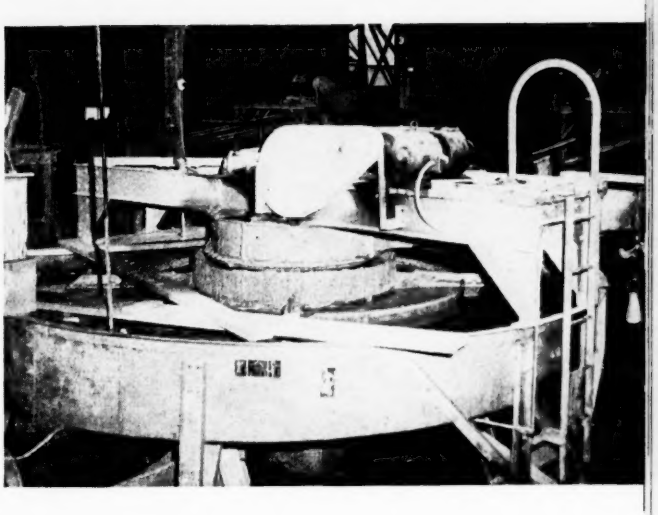
The first oil to be found in Arkansas was in the Sam S. Hunter well in Ouachita County, and the first commercial production was the "Busey Well" completed by Dr. Busey, January 10, 1921. The well was

the Armstrong No. 1, Section 31, Township 17 South, Range 15 West, and opened the El Dorado field. Production was from the Nacatoch sand of upper Cretaceous age.

During the next year and a half, Nacatoch production was found in the Irma field of Nevada County, the East El Dorado and Woodley (Grimes) fields of Union County, the Stephens field of Columbia, Nevada and Ouachita Counties, and the Smackover field of Union and Ouachita Counties. The Smackover field was easily the largest of the discoveries, and still enjoys the distinction of being the largest field in Arkansas.

The history of the oil industry in Arkansas, as in the other oil producing states, may be divided into two distinct periods that corresponded to and depended in part upon the state of the art of exploration and geologic and engineering knowledge. The first period of early exploration was characterized by the exploration and exploitation of the shallow productive beds, and the second was marked by the comparatively recent exploration of deeper formations such as the Cotton Valley sands and the Smackover limestone formation. Surface geology was the chief tool employed by the wildcatter during the first period, but since 1935-36 geophysical methods have been utilized intensively with the result that the discovery rate was greatly accelerated.

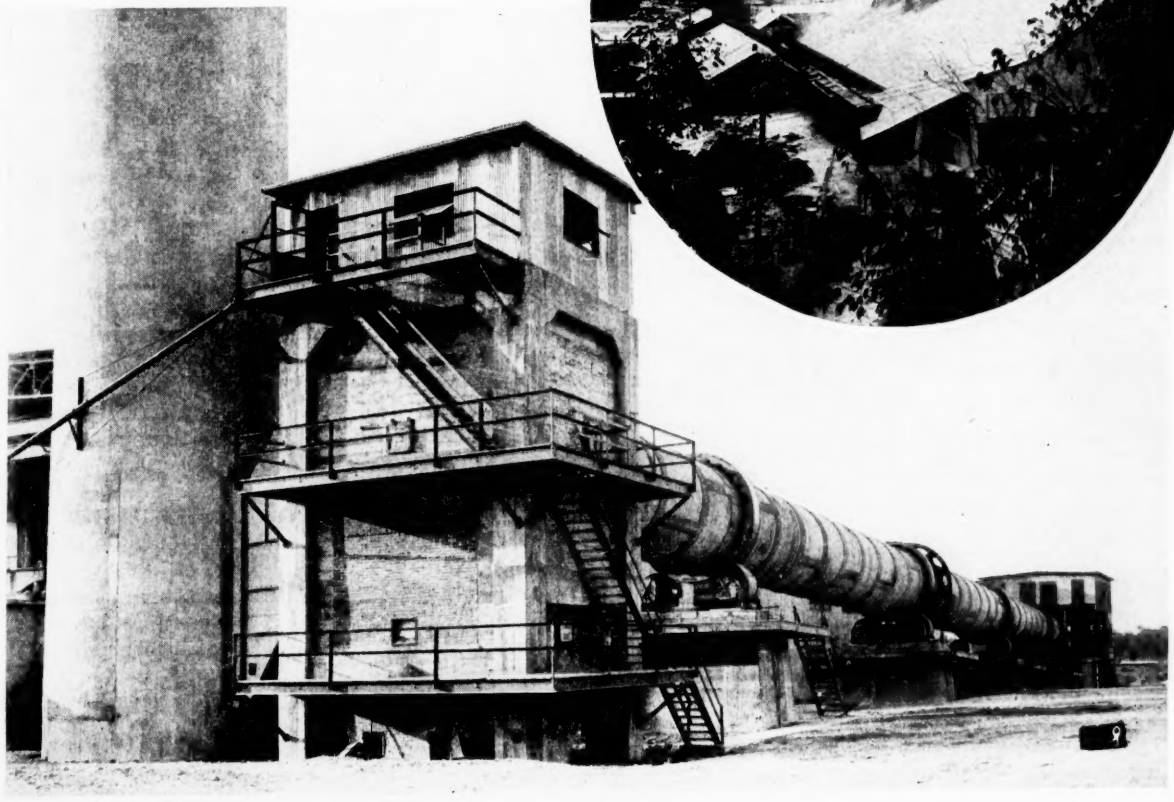
There were 44 fields producing oil in Arkansas at

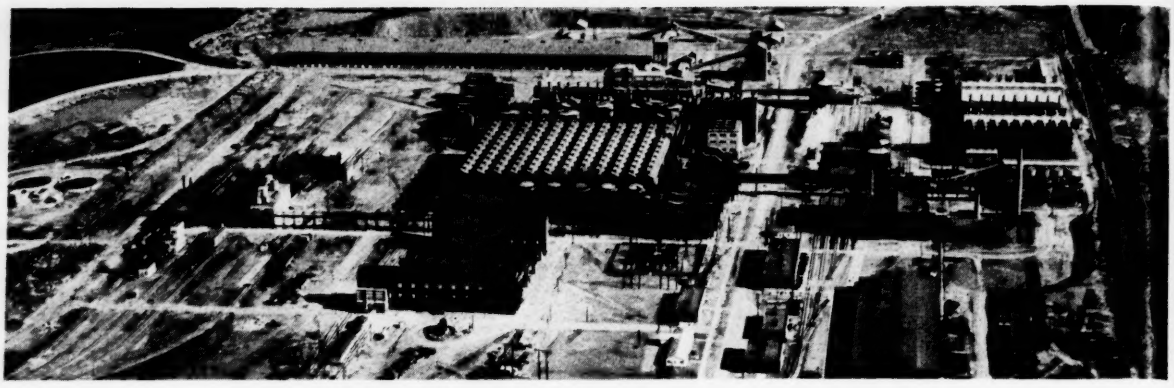


Above—Refining barium in Arkansas.

Circle—White lime plant.

Below—Cement plant in south Arkansas.





Above—The Hurricane Creek Alumina Plant.

the end of 1946. Of these 29 were drilled since 1937. Total production during 1946 was 28,367,496 barrels.

Seven refineries operated in the state during 1946 and processed 14,929,266 barrels of oil, equivalent to 53 per cent of the oil and condensate produced in the state that year.

Natural gas is produced both in the oil fields of southwest Arkansas, and another field in the northwest which produces gas alone. All the gas produced in the northwest field is sweet gas and is used for light and fuel. Production for 1946 was 3,655,178,000 cubic feet. Of this production, 1,223 million cubic feet came from Johnson County and 1,175 million cubic feet from Franklin County. In southwest Arkansas, production of natural gas in 1946 amounted to 57,516,548,000 cubic feet, of which 52,793,773,000 cubic feet were sold to gasoline plants.

There are ten plants in the state processing gas into gasoline and other products. Of the total take of gas, 203 million cubic feet were used for plant operation, and a substantial portion of the remainder converted into the following products: condensate, 39,337 barrels; gasoline, 1,098,353 barrels; butane and protane, 826,317 barrels. Besides producing these commodities, large quantities of gas were sold for domestic and industrial use and some was returned to the earth in secondary recovery methods.

At the close of 1946 there were 12 geophysical and core drill crews engaged in the search for oil reserves. During the year 192 wells were completed in this search; 52 of these wells resulted in new discoveries.

Supplementing the fuel reserves that are contained in its petroleum pools, Arkansas has substantial deposits of bituminous fuels. In the Arkansas Valley, between Russelville and Fort Smith, are some 300 square miles of coal-bearing land containing over 650 million tons of mineable coal.

For almost fifty years, coal was the state's most important mining industry, dropping to second place in value of minerals produced with the discovery of oil in 1920.

Arkansas coal varies from semi-anthracite in the eastern part of the field about Clarksville and Russelville to low volatile bituminous in the western area. The harder Arkansas Anthracite from the eastern district is an excellent smokeless domestic coal and commands a premium price, particularly in cities having anti-smoke requirements. The bituminous coal is chiefly of low volatile content, some being of almost smokeless quality, and is more suited for steam production in locomotives or factory furnaces because of its high heat producing qualities. A large percentage is recognized as ideal as a blend for the manufacture of coke. With an average b.t.u. content of 13,920 units, these coals rank among the best in the United States with respect to heating value.

Production now is mainly from Sebastian, Logan, Franklin, Johnson, and Pope Counties, with some 90 mines operating in the combined area.

Description of Arkansas minerals would not be complete without mention of diamonds. John W. Huddleston, a farmer living on Prairie Creek near Murfreesboro in Pike County has the distinction of having put Arkansas on the map as the only locality in North America where diamonds occur in the rocks in which they are formed.

Altogether over 10,000 diamonds have been mined from the peridotite areas along Prairie Creek. The diamonds range in weight from a small fraction of a carat to many carats. The largest stone, which was found in 1924, weighed 40.23 carats and was valued at the time at $20,000.

These diamonds are declared by leading jewel experts to be exceptionally perfect, and to be equal to the finest stones found at the Jagersfontein (Africa) mine, or any of the mines of India. Most of the Arkansas diamonds are white, brown, or yellow, with average weight between 0.3 and 0.4 carat. As to use variety, they are estimated to divide into 10 per cent of gem quality and 90 per cent industrial stones.

The mines thus far operated are all of near-surface type, seldom exceeding 20 feet in depth. What may lie at greater depths than this is not known. It is significant, however, that some of the South African excavations for diamonds have gone to depths of 3,000 feet or more.

While diamond wealth has never been counted by Arkansas as one of their major mineral resources, the industry at least holds the distinction of being the only one of its kind in the nation.

Furthermore, until deeper explorations are undertaken, it cannot be known whether or not the range of this wealth may be far greater than even the unusual showing made by developments thus far.

TRANSPORTATION

The state of Arkansas averages well with the rest of the South in the matter of transportation facilities. Transportation is a field, moreover, in which the South as a whole has more than held its own in competition with other sections of the country.

Arkansas ranks eighth among the sixteen Southern states in railway mileage, fifth in highway mileage, ninth in number of airports. Main line railway mileage in 1945 totaled 4,354 miles; mileage of primary highways totaled 8,694 miles; of airports, at the last count made during that year, there was a total of 57 of all types.

Transportation has always been a vital element in the state's economic development. This importance became greatly intensified in the era that followed the Civil war. It was during this period that railroads sprang into prominence, to become virtual lifelines for the swiftly growing Southwest.

Probably the most important contribution of the railroads in the post-bellum period consisted in the opening of steel-railed thoroughfares through the fine forests of the state. Both short lines and trunk lines pushed their way westward from the Mississippi, and southward from Missouri, into the luxuriant woodlands of the Ozarks, and into the river valleys that were then lined with the finest hardwoods to be found in the United States.

In those earliest days of railroad development wood was not only the cargo, but also the fuel for freight train operation. Wood, or fuel, stations were set up about 30 miles apart. At these, special crews kept replenished with fuel wood the platforms that ranged close alongside the railroad tracks, and aided train crews in loading the fuel into the engine tenders.

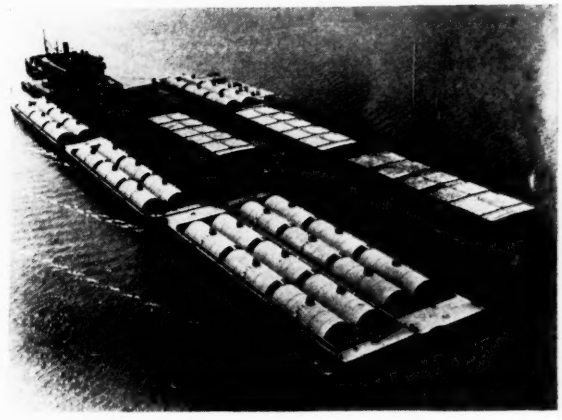
Additional help was available to passenger crews, and history in this respect challenges the oft-repeated Slow Train through Arkansas tradition. It is historically recorded that when a passenger train in Arkansas stopped at a fueling station, passengers, one and all, piled from their seats to lend a hand in the proceedings, thereby adding speed to the train schedule.

In addition to making possible the commercial exploitation of one of the region's richest resources, railroads gave impetus to immigration and to the settlement of the region. Whereas travel theretofore from eastern and southeastern states had taken weeks to reach and cross the Mississippi, the time via rail was cut to days. The result was that more and more enterprising pioneers poured across the Mississippi to clear the almost endless acres of rich loam lands that lay along the far banks and stretched far back into the interior.

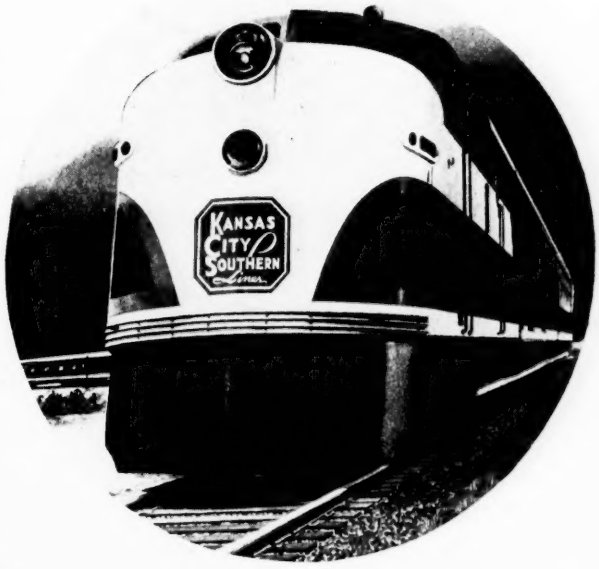
Excitement over the coming of railroads stirred the citizens of Arkansas as early as 1850, but the Civil War disrupted for the time elaborate plans for extensive railroad development. Nevertheless, rail progress was achieved even before the war. The Memphis and Little Rock was able to build considerable lengths of track, inland from the Mississippi port of Hopefield, opposite Memphis, and northeastward from Lit-

Above—One of the five Transcontinental Railroads serving Arkansas.

Below—Barge on the Mississippi River, which affords transportation to the Gulf and many river points.



Circle—An air-conditioned streamliner which passes through Arkansas' Ouachita mountains on the Kansas City-New Orleans run.



Above—North Little Rock railroad shops of the Missouri-Pacific.

tle Rock. Building of the road proceeded from both terminals.

In those days, the uncontrolled waters of the Mississippi, bursting at intervals over wide expanses of lowlands, made travel both tedious and hazardous in the eastern part of the state. The Memphis and Little Rock became of foremost importance. By 1862, the western section extended to De Valls Bluff on the White River, but a considerable interval still remained between the two sections. Until these were brought together in 1871, passengers utilized the rail lines as far as they went, and traveled the intervening gap by stagecoach and steamboat. A mighty celebration was held when finally the two ends of line were joined. This line is now part of the Rock Island system.

Another road that made progress before the war was the St. Louis, Iron Mountain & Southern, now part of the Missouri Pacific system. While it did not succeed in penetrating the state itself until after the cessation of hostilities, it was able to push its right-of-way from St. Louis to the Missouri-Arkansas line. After the war, work was resumed, and in 1872 the road reached Little Rock. By 1874, it had driven on to Texarkana on the Arkansas-Texas stateline, to become the first railroad to entirely cross the state.

Subsequent developments brought other roadways into various parts of the state, all of which were eventually to become integrated in a series of great rail way systems. Today the state is amply supplied with railway accommodations through the facilities of the Cotton Belt, Eldorado & Wesson, Frisco, Kansas City Southern, Missouri & Arkansas, Missouri Pacific, and St. Louis-Southwestern systems. The roads of these systems give Arkansas transcontinental rail connection, and provide excellent freight, mail and passenger service to all points in the United States.

All systems are reported busily improving their equipment and trackage in anticipation of vigorous participation by Arkansas in the expanding industrial life of the South. Track curves are being moderated, secondary trackage is being extended and improved, diesel locomotives are being provided as fast as they can be obtained, centralized control is being installed to insure safety and speed up schedules.

Supplemented as they are by efficient truck and bus transportation that radiates throughout the state, the railroads serving the region look to be more than competent to take care of the industrial expansion that appears to be inevitable.

Before the advent of the railroads, travel was difficult in Arkansas, as in other pioneer sections of the United States. Nevertheless, the hardy forebearers of present day Arkansans found one way or another to get to their promised land, and to intercommunicate with each other after they arrived.

Below—Cotton Belt shops and yards at Pine Bluff.

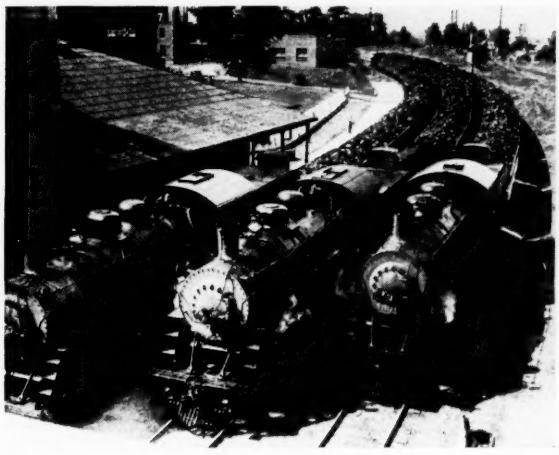
Above—This Little Rock warehouse is completely mechanized and by use of modern equipment can unload six cars simultaneously.

Probably the earliest and, at the time, most serviceable mode of travel was by water. The piroque and keelboat paved the way for the steamboat which, for many years, was the most important transportation link between western and eastern Arkansas, and between the state and the rest of the world. Fortunate as the region was in having an unusual number of navigable rivers, early settlers utilized this facility to its fullest extent. Steamboats not only plied between Arkansas ports and New Orleans to the south, and Pittsburgh to the north, but also carried intrastate traffic in substantial volume on such streams as the Arkansas, White, Red and Ouachita Rivers. A steamer visited Arkansas Post as early as 1820; another arrived at Little Rock in 1822, a full half century before the railroads were ready to take over a complete transportation assignment.

As the railroads came in, river traffic began to decline. River port settlements shifted to railway centers. A reversal in settlement location took place. Nevertheless, the railroads were never to dislodge completely all vestiges of river traffic. Steamboats became fewer and fewer, finally dwindling to a mere trickle of pleasure and excursion craft, but at the same time barge traffic began to flourish. To this day barge traffic furnishes a valuable adjunct to railway service, serving in many instances as feeders to swell railroad cargoes, at others to reach into nooks and crannies where neither rail, highway, or air facilities have yet penetrated.

Along with waterway traffic, there were developed overland ways of travel that also greatly anteceded the railroads. At first these were mere blazed trails through dense forests and over treacherous fords. They were, however, destined to evolve in later years into a miraculous network of surfaced highways, the like of which probably could not have been imagined by the travelers of the rugged, rocky trailways of the early nineteenth century.

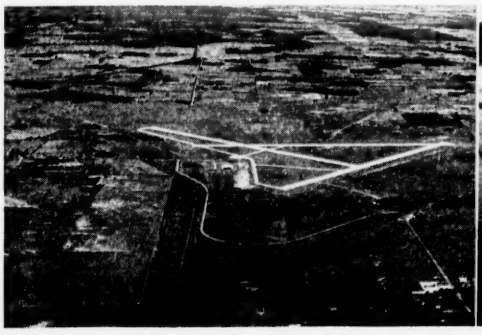
Below—Frisco trains loaded with coal from Arkansas headed for middle west factories.

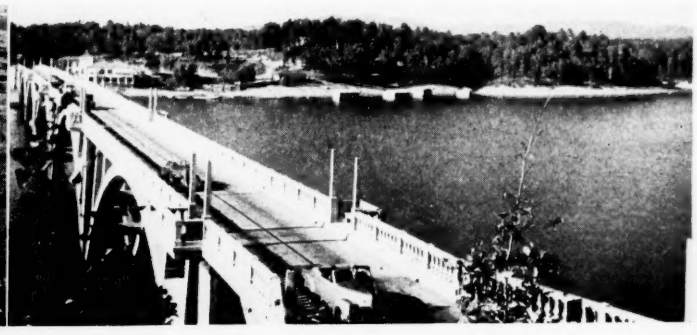


Mighty bridges now have long displaced the dangerous fords that once linked the banks of Arkansas rivers. Endless miles of wide, smooth, ribbons of concrete and blacktop now reach to every end and corner of the state. Supplementing these more than 8,000 miles of super arteries, 45,000 miles of other roadways make accessible to every farm a market, to every shipper of freight a terminal, to every seeker of outdoor pleasure a myriad of unsurpassed playgrounds.

To round out its modernized transportation system, nothing better could have been asked than the aggressive spirit with which the state has gone about developing its airway facilities. Acquainted with the fundamentals of aviation as early as World War I, through its Eberts Field near Lonoke, the state's air-minded citizenry was not long in establishing a commercial airport at Little Rock.

Below—Left—Jonesboro air field, typical of those throughout the state. Right—One of many fine bridges spanning Arkansas streams.





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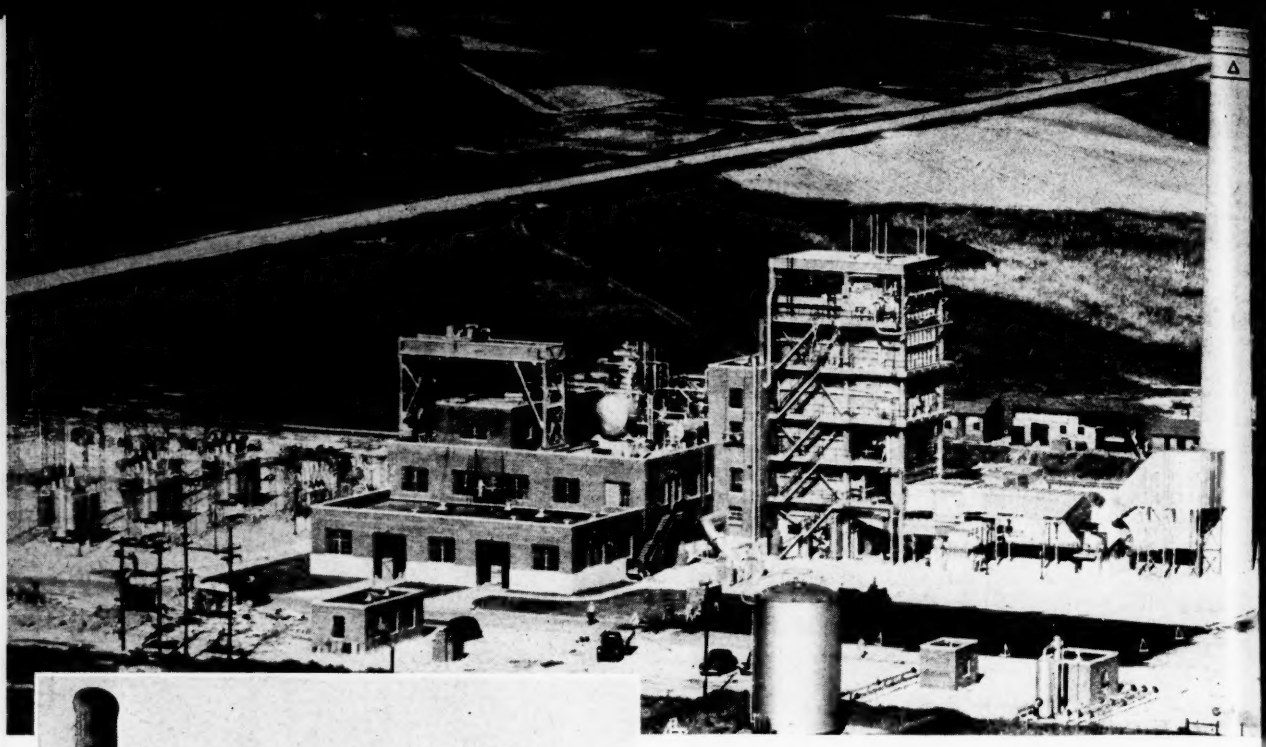
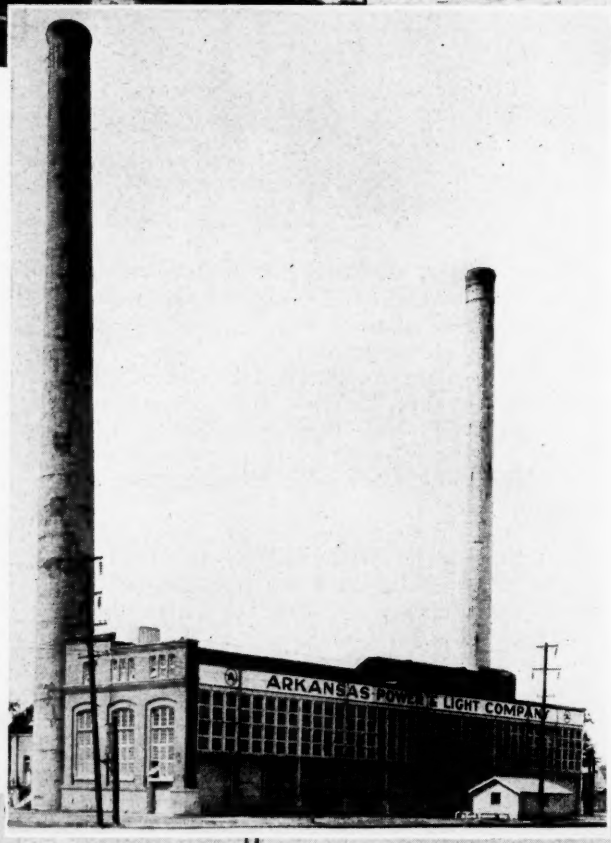


Above—Aerial view of $3,500,000 Cecil Lynch steam-electric station of Arkansas Power & Light Co. near Little Rock.



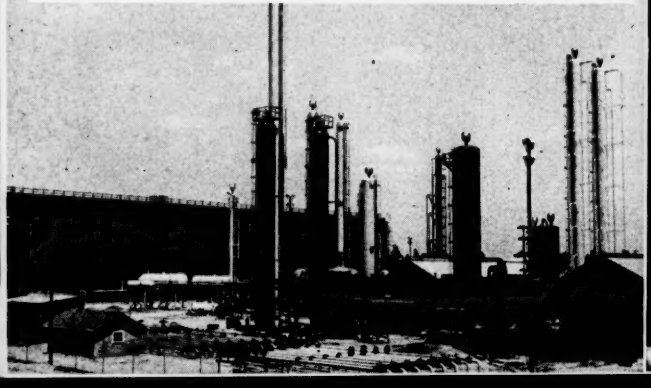
Left—This Pine Bluff plant uses natural gas.

POWER

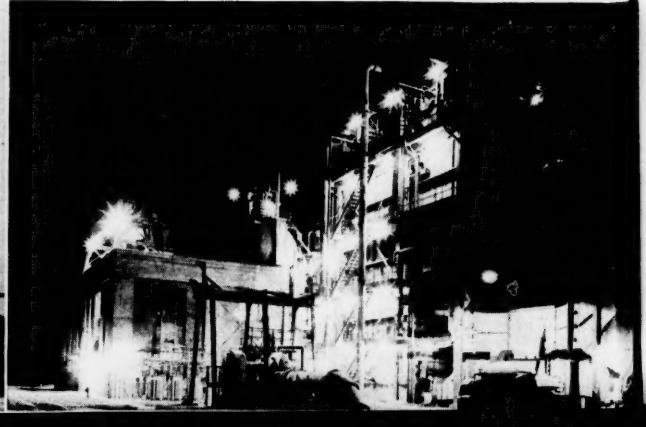
Through the long-range planning of four of the major electric companies of the Southwest which operate in the state, Arkansas has had and will continue to have an adequate and dependable supply of low-cost electric power for all purposes.

These four companies are the Arkansas Power & Light Company, Arkansas-Missouri Power Company, Oklahoma Gas & Electric Company, and Southwestern Gas & Electric Company.

Power is produced from both steam-electric and hydro-electric generating stations located throughout the areas served by these companies and intercon-



Below—Left—Natural gas plant owned by Arkansas Fuel Oil Co., capacity 75,000,000 cubic feet daily.



Below—Harvey Couch plant at Stamps.

nected by means of a major grid transmission system that assures a continuous supply to the entire state. Supplementing the generating capacity of these four companies are firm contracts for additional power from neighboring companies bordering the four sides of the state.

The generating capacity of these neighboring companies and of systems as far removed as Corpus Christi, Omaha and Cincinnati is available by displacement at all times in case of an emergency, through the largest interconnected transmission system in the world.

Arkansas' transmission network is interconnected to the east with systems whose generating capacity totals more than 13 million kilowatts; to the south and southwest with systems whose generating capacity exceeds 1½ million kilowatts and with systems to the west and north totaling more than one million kilowatts.

This network of transmission lines which cross the state from border to border north, east, south and west provide the supply for the spiderweb of feeder lines that reach out to every community and hamlet in Arkansas.

Within the state and tied in to the transmission network the four major electric companies have in excess of 110,000 kilowatts in steam electric generating capacity and 65,000 kilowatts in hydro electric generating capacity. In addition to the generating capacity of the electric companies, the government has one multipurpose dam in which one 35,000 kilowatt generator is installed, making a total of 220,000 kilowatts of steam and hydro generating capacity.

In view of prospective loads resulting from new industries locating in Arkansas and in order to provide adequate capacity for reserves and normal load growth, the electric companies have under construction or on order for installation in Arkansas within the next three years 150,000 kilowatts of steam electric generating capacity. Within the next five years the government will have completed three new multipurpose hydro projects primarily for flood control in which there is scheduled to be installed approximately 210,000 kilowatts of generating capacity.

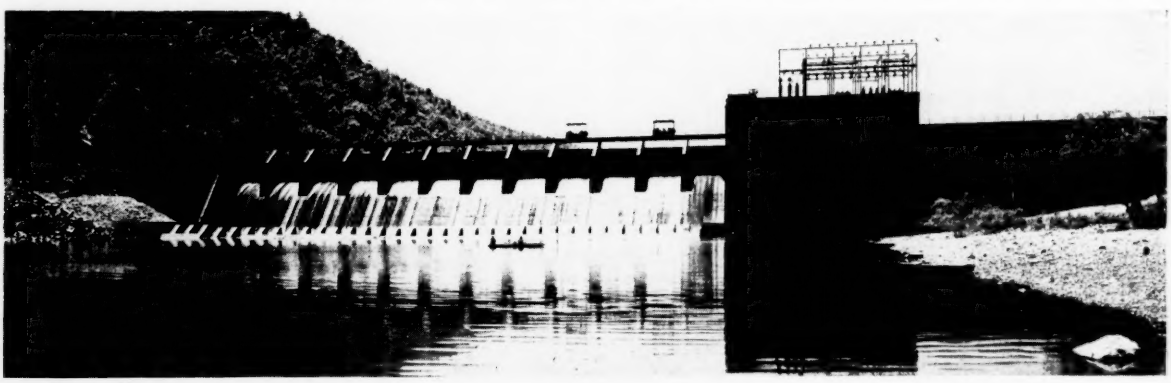
In the early years of the industry, electric companies consisted mainly of small, expensive, local generating plants with local distribution systems and with a service area confined in most cases to a small radial distance from the generating station. Service was available only a few hours each day and interruptions due to equipment failure and personnel, were frequent and at times, of long duration.

It was recognized by some interested in the future progress of the industry that two generating stations interconnected would provide more reliable service than one, and that two localities having separate generating facilities would benefit materially through improved service by interconnecting these plants and integrating the operation of the two separate systems. This was the beginning of interconnected and integrated operation. As the industry progressed, so did the interconnections with the resultant improvement in service and reduction in rates. At the beginning of World War II, the country was sadly in need of aluminum for airplanes. Arkansas had an abundance of bauxite from which aluminum is made, and those responsible for the war effort decided to locate an aluminum plant in Arkansas. The power required to operate this plant greatly exceeded the total power requirements of the state prior to the war, and no one system had sufficient reserves to carry this load since maintaining such reserves would have necessitated increased rates and therefore an undue burden on the customers. There was not sufficient time to purchase and install generating equipment to carry this load, and in addition, the manufacturers of this equipment were working to capacity producing other essential war materials.

The necessary transmission line was constructed and a Technical Staff with offices in Little Rock was appointed by the executives to coordinate and integrate the operations. As a result of the coordination and integration, Arkansas was able to take care of a tremendous amount of war loads in addition to the Aluminum Plant without curtailment to a single customer.

Recognizing the many benefits to their customers resulting from this interconnected and integrated operation and the evidence of large load growth due to industry moving into the Southwest, the major electric companies feel that coordination of power and transmission facilities is essential.

Below—Remmel dam, one of the two hydroelectric plants of Arkansas Power & Light Co. It is located on the Ouachita River near Hot Springs.



Left—Student Union building at University of Arkansas. Tower of University Hall, oldest building on the campus of that Fayetteville institution is shown in right background.

EDUCATION

Arkansas ranks twelfth among the states of the nation in the percentage of state revenue supplied for educational purposes. The proportion amounts to better than 44 per cent, which by any yardstick of comparison represents a high ratio.

While making this generous contribution in behalf of good schools, the citizens of the state nevertheless recognize that the sacrifice now being made is insufficient to attain and maintain the kind of school system they want.

This attitude is evident in the action which created the Arkansas Public Expenditure Council, with the purpose of devising ways and means of improving all the schools of the state. It is even more evident in the aggressive manner in which the Council went about its assignment, and in the frankness to be seen in the published statement which the Council rendered upon completion of its studies.

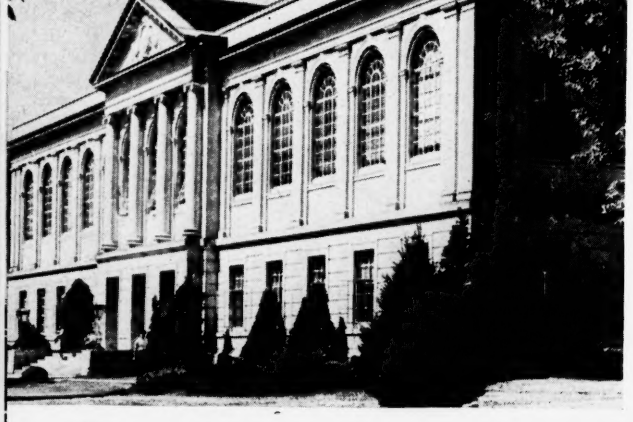
The Council reports that while the state ranks twelfth in ratio of revenue spent on schools, it ranks 47th in average annual salaries paid to teachers and 46th in the value of school property per pupil.

Definite progress, however, is clearly apparent. Improvements in education have been taking place right along in years past and at present. At the same time, improvements in industrialization are also making encouraging headway. As these two kindred forces of progress swing along together, the beneficial influence of each on the other will produce improvement in geometrical proportion. Profitable business will form the base for an ever widening tax structure; reciprocally, more highly educated young people will give added impetus to business expansion.

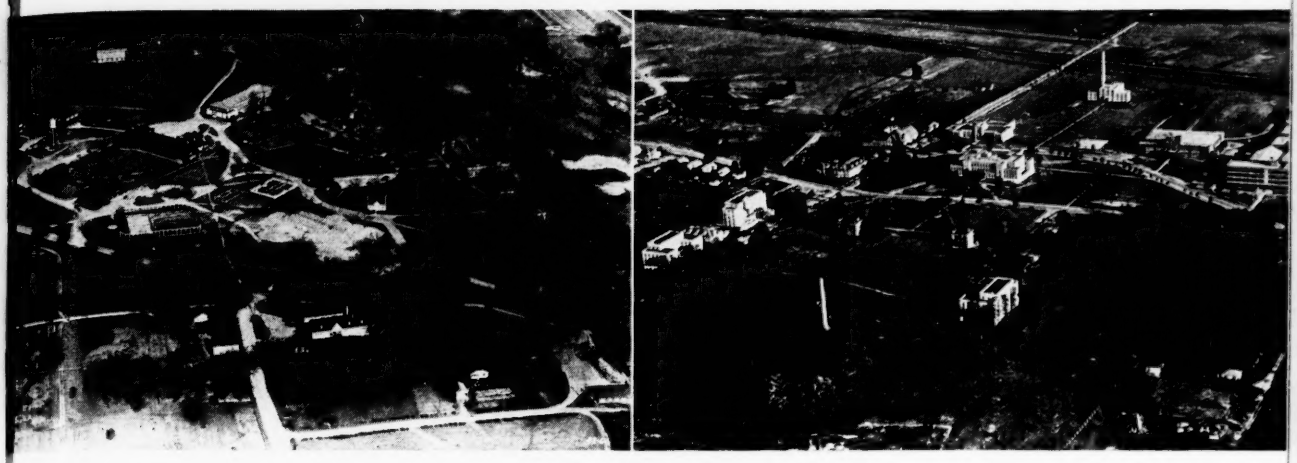
As the situation exists today, educational progress is being achieved. Still greater progress can be looked for with fulfillment of the recommendations of the Expenditure Council. While cautioning against unwise inflation of the tax structure, the Council presents a formula for immediate reorganization of the administrative system of the state's public schools.

The reorganization phase of the report stresses consolidation of schools as the keynote of its policy. A number of advantages are apparent in the proposal. Among these, economy of operation stands out strongly. This part of the program, in reality, is a continuation of improvements begun as far back as 1920. In that year, school districts in the state numbered 5,112; by 1925, they had been reduced to 4,919; in 1930, they numbered 3,703; in 1935, 3,151; in 1940, 2,920; in 1944, 2,451.

The Council urges that the procedure be speeded. As a general rule, it is contemplated that the 75 counties of the state become the basic educational divisions. The counties are already equipped with considerable personnel directly related to school operation. They collect a good portion of the taxes that gravitate to individual school units, and have impor-



Left—Vol Walker Memorial Library at University of Arkansas contains more than a quarter million books.



Above—Left—John Brown University, Siloam Springs. Right—Arkansas State College, Jonesboro.

tant voice in distribution of funds among the schools.

It is contemplated that a number of overlapping functions be eliminated by the consolidations. In addition to the overall economy in cost of operation that would be effected, the plan offers the advantage of making higher salaries available for the fewer executives that would be employed. This would make for executive personnel of greater ability.

To insure against too great rigidity, communities with fewer than 1,600 pupils each would be permitted to petition for individual districts. This would insure separate jurisdiction to municipal centers such as Little Rock, Fort Smith, Hot Springs, Pine Bluff, North Little Rock, El Dorado, Texarkana, Jonesville, and Blytheville—all cities of 10,000 or more inhabitants—as well as a number of towns of smaller size that have built up school systems that would suffer through change in management. The plan provides that in no instance would standards achieved by particular communities be reduced to the general level if they already enjoyed status above the state average.

It can be readily seen that the program holds promise. Even should as many as 25 population centers find it advantageous to retain their own independent school systems, the total number of districts or units would still be reduced from the recent 2,400 to a number in the neighborhood of 100.

In the immediate program are aggressive plans for making more serviceable the vocational schools of the state. These would be brought under the jurisdiction of the same authorities that control the high schools and junior colleges, and would be insured the same attention given other units of the school system instead of the remote control that has obtained.

In the educational field above high school level, Arkansas has nine institutions in the college-university class; one technological school; two teacher's colleges; five colleges for Negroes; six junior colleges.

Making up the first group are Arkansas Agricultural and Mechanical College at Monticello; Arkansas College, Batesville; Arkansas State College, State College; College of the Ozarks, Clarksville; Harding College, Searcy; Hendrix College, Conway; John Brown University, Siloam Springs; Ouachita College, Arkadelphia; University of Arkansas, Fayetteville. St. Johns Seminary, Little Rock, is the technological institution.

Teacher institutions are Arkansas State Teachers College, Conway, and Henderson State Teachers College, Arkadelphia.

Negro Colleges: Agricultural, Mechanical and Normal College, Pine Bluff; Arkansas Baptist College, Little Rock; Dunbar Junior College, Little Rock; Philander Smith College, Little Rock; and Shorter College, North Little Rock.

Junior Colleges: Agricultural and Mechanical College, Magnolis; Arkansas Polytechnic College, Russellville; Central College, Conway; Fort Smith Junior College, Fort Smith; Junior Agricultural College of Central Arkansas, Beebe; Little Rock Junior College, Little Rock.

It appears likely that the state of Arkansas, as well

Below—Arkansas Polytechnic College at Russellville.

as other largely agricultural states, will not be able to eliminate all of its one-teacher, lightly equipped schools for some time to come. On the other hand, the rapidity with which roads and transportation facilities are being modernized gives good ground for expectation that important consolidation will continually take place. Each step along this route will go a long way toward raising educational standards to the desired level.

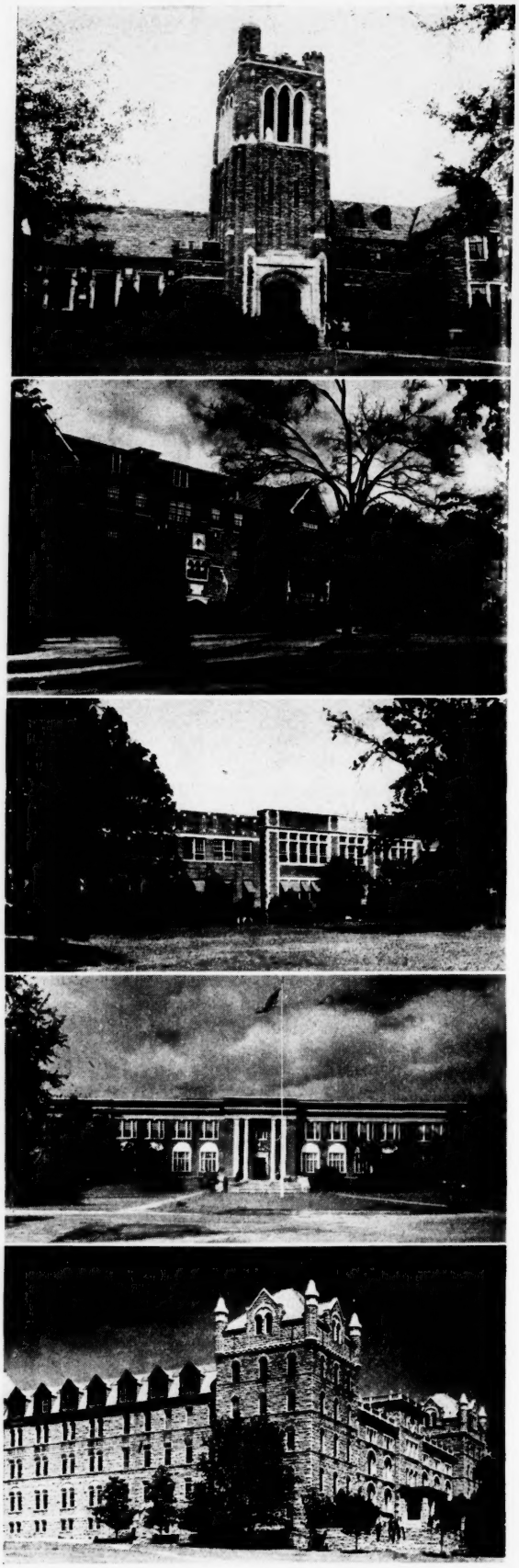
In order to fulfill this responsibility Southerners who pay practically all the taxes that go for educational purposes have not, as in other sections, been able to apply them to their own children alone. Were they able to do this there can be little question that the educational status of the white youth of the South would be much higher than it is.

While the rest of the nation has contributed comparatively little to the sacrifices which have raised Negro education to nothing short of astonishing levels, there is clear evidence that other parts of the nation are reaping the benefits. Between 1920 and 1940, the net increase of Negro population in states outside the South amounted to 1,444,000 persons. Within the South, net increase was 736,000. In reality, the South, year by year, is educating the future citizens of other states. The state of New Jersey now has a population of which five per cent is Negro. Oklahoma in the South is expected shortly to have a Negro proportion of population lower than five per cent.

When considered from the viewpoint of handicaps, the state of Arkansas can point to prideful educational progress. Since 1900 the ratio of school population to total population has held fairly constant. At the same time percentage of school population actually enrolled in schools has been steadily increasing. Furthermore the proportion of enrolled children in daily school attendance has increased during each decade since the beginning of the century. Along with these healthy signs there has been a noticeable increase in the proportion of pupils attending high schools.

This progress is due both to improved educational facilities and to improved enforcement of enrollment laws. Progress in both respects becomes the more significant when it is considered that Arkansas has more children and fewer adults than the national average. The school burden becomes progressively more severe per tax-paying capita as the ratio of pupils to taxpayers increases.

During the school year 1944-1945, there were enrolled 401,662 pupils in the state. Of these, around 150,000 were high school pupils. For the education of all its public school pupils, the state expended a total of $20,952,035. In addition, 50,913 students were enrolled in vocational schools. Expenditures on these totaled $1,037,506.



Right—Top—Fine Arts building, Arkansas A. and M. College, Monticello. Second—Hendrix College, Conway. Third—Arkansas A. and M. and Normal College for Negroes, Pine Bluff. Fourth—State Teachers College, Conway. Bottom—Subiaco College, Subiaco, Ark.

Above—The Arkansas State Capitol at Little Rock.

STATE FINANCE — TAXES

Available data indicate Arkansas is in an improved financial position both in terms of financial resources and income. Liquid asset holdings of individuals and business firms at the end of 1946 are estimated at $1,100 million. Deposits of individuals and business firms in commercial banks amounted to $564 million, or approximately 51 per cent of total liquid asset holdings. Of this amount, it is estimated that individuals held about $330 million, or 59 per cent, the remaining $231 million being held by business firms. Time deposits in commercial banks were $94 million and deposits outside banks, principally in building and loan associations, totaled about $3.4 million. Savings bonds (E, F, and G) held by individuals and business firms were about $250 million, and currency holdings were about $190 million. Holdings of Government bonds other than savings bonds and other securities, are not included in this inventory.

Both bank resources and income in Arkansas increased more than the national average during the war period. Total assets of all commercial banks in Arkansas amounted to $829 million on December 31, 1946 as compared to $227 million on December 31, 1939. The increase in commercial bank assets since the end of 1939 was $602 million, or 265 per cent, considerably above the 130 per cent increase for the country as a whole. Income payments to individuals and business firms in Arkansas amounted to $1,171 million in 1945 (the latest date for which state data are available) as compared to $478 million in 1939. The increase for Arkansas from 1939 to 1945 was 166 per cent as compared to an increase of 113 per cent for the United States.

Total state revenues from all sources have risen steadily from $22,135,000 in 1930 to $56,446,000 in the fiscal year 1945-46. Substantial gains were made during the war, and increases in major tax collections during the first postwar year were little short of spectacular.

New taxes imposed since 1930 include those on alcoholic beverages, beginning in 1934, and the sales tax, forerunner of the present gross receipts tax, first collected in 1936. These two items, totaling $18,760,000 in 1945-46, represent more than half of the total increase in state revenue since 1929-30.

Because taxes collected by the state to support non-highway functions fall largely upon individuals, as distinct from taxes on business or property, business in Arkansas occupies a favored position. Tax levies on business, as such, produce for Arkansas a minimum percentage of total general tax revenue. Combined property and business levies constitute a smaller percentage of the total general tax levies of the state than in any other state. Of the state's total general revenue, 69.3 per cent is collected directly from the individual or as an identifiable amount of the purchase price of commodities.

"Arkansas corporate taxes, as compared with other states with which Arkansas is competing for industry, are not such as to be a discouraging factor," the Public Expenditure Council report said.

As a revenue producer, income taxes accounted for five per cent to slightly more than eight per cent of total revenue since 1942, the first year in which corporation tax rates were established at current levels. These rates now are one per cent for the first $3,000,

XUM

Right—Old Confederate capitol used during the War Between the States. It is located at Washington, Ark.

three per cent for the next $5,000, four per cent for the next $14,000, and five per cent for income over $25,000.

For individuals, the state income tax is imposed at the initial low rate of one per cent on income above personal exemptions. Only two other states have lower maximum rates than Arkansas. Income taxes have been levied in Arkansas since 1929. Current rates provide exemption of $2,500 for unmarried persons, $3,500 exemption for heads of families, and $400 exemption for each dependent.

On entrance into the state, foreign corporations are taxed on the basis of proportion of issued capital stock represented by property and business within the state. The tax is graduated from one-one-hundredth of one per cent of the first one million dollars to one-four-hundredth of one per cent of amounts over ten million dollars.

Domestic corporations are taxed on the basis of authorized capital stock, at rates based on par value of shares, and graduated from one cent per share for the first 10,000 to $550 plus one-fourth cent per share in excess of 100,000. No-par value shares are taxed at a graduated rate from one-half cent per share for the first 10,000 to $455 plus one-tenth cent per share in excess of 1,000,000. The minimum fee is $10. Corporations organized to do business entirely outside the state of Arkansas may organize and file papers for about one-half of the above rates.

Domestic corporations doing no business within the state pay an annual $5 tax. The tax is reportable May 1 and must be paid by August 10 yearly.

In 1941 Arkansas repealed her inheritance tax and imposed in its stead a tax upon the net income as defined by the federal tax laws.

Severance taxes are levied on a number of natural resources, the principal of which are: coal, bauxite, gypsum, stone, sand, gravel, and clay, one cent per ton; timber 10 cents per 1,000 board feet; and a number of miscellaneous materials at four per cent of market value.

The state property tax which yields an unusually high percentage of total state revenue has risen in amount collected from $3,703,212 in 1933-34, to $4,066,490 in 1944-45. This tax, levied currently at six and one-half mills, will be discontinued with the levy to be made in 1947 for collection in 1948. There will be no levy in 1948 collectible in 1949.

The gross receipts tax or sales tax, overhauled by the 1941 legislature after having been first enacted in 1935 and again in 1938 as emergency measures, is the largest revenue producer in the tax system with the exception of the motor fuel tax, and provides more than one third of all state revenue aside from the motor fuel tax. From this tax comes support of schools and maintenance of fire, health and justice departments.

Like most states, Arkansas' unemployment compensation taxes are levied in accordance with a schedule which grants recognition of stable employment conditions. The tax rate upon a given employer depends upon the excess of his tax contributions in the past year over the claims by employees who were separated from the payroll.

The General Assembly of 1947 liberalized the merit rating schedule appreciably. The old and new schedules, with the item "reserve ratio" being the per cent of the average payroll during the last three years by which tax payments for all previous years exceeded the unemployment claims allowed for such years are:

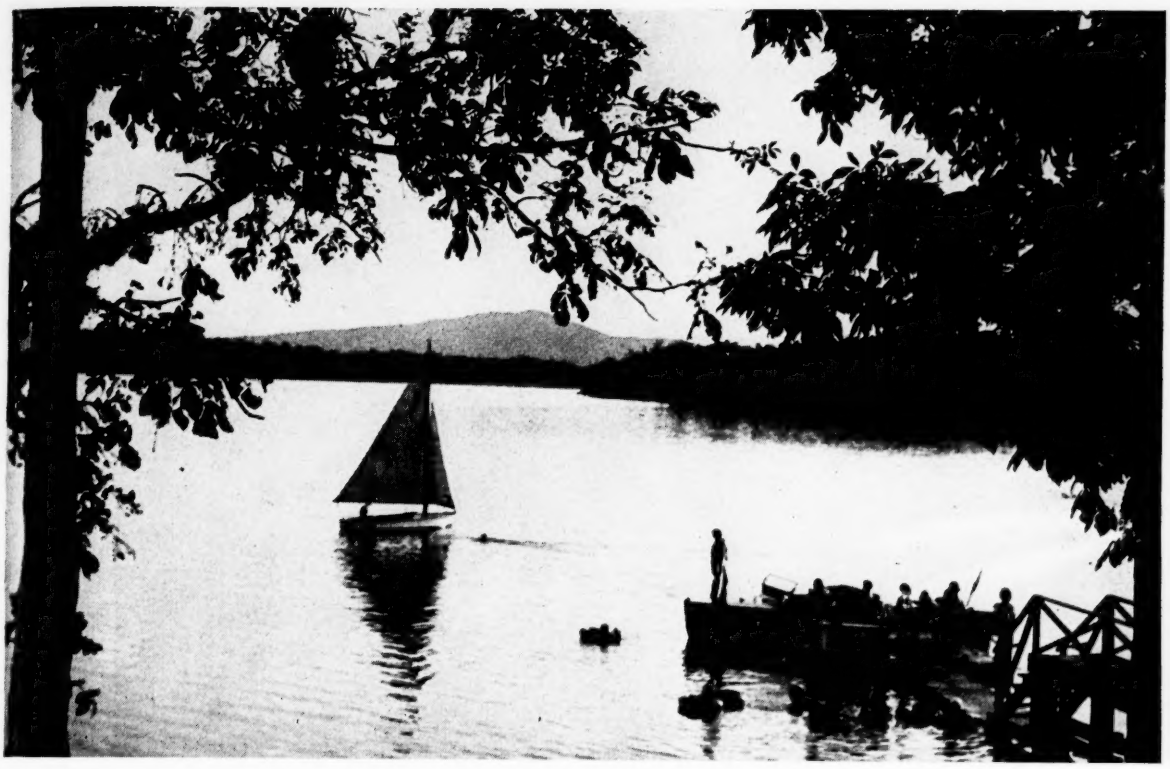
Old Law

Reserve Ratio	Tax Rate
Less than 7½%	2.7%
More than 7½%, but less than 10%	2.0%
More than 10%	1.0%

1947 *Law*

Reserve Ratio	Tax Rate
Less than 7%	2.7%
More than 7%, but less than 8%	2.0%
More than 8%, but less than 9%	1.5%
More than 9%, but less than 11%	1.0%
More than 11%	.5%

Right—The Old State House at Little Rock.



Above—Lake Hamilton.

RECREATION

Below—The Hot Springs Golf and Country Club has three 18-hole Championship Courses open the year round.

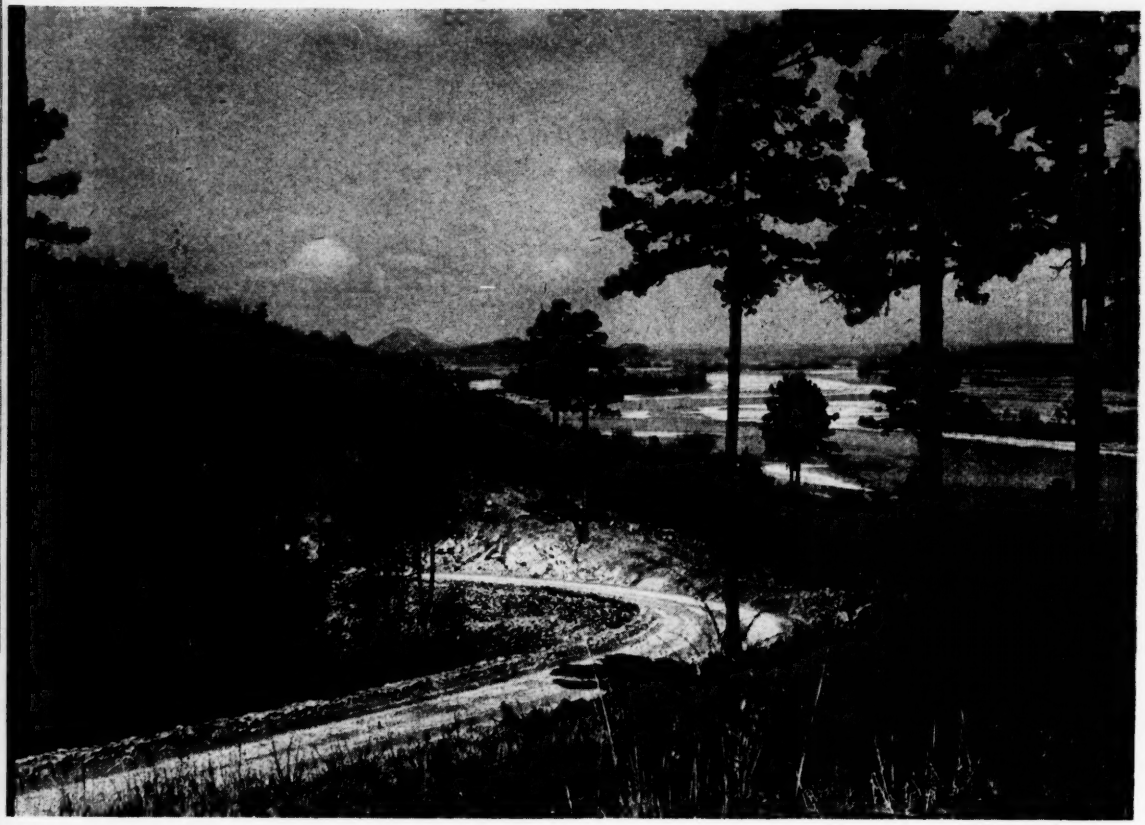
One of the great natural resources of Arkansas is scenic beauty. A sprawling industry, across the whole breadth of the state, has been built around the nationally demanded commodities of scenery, resorts, mountain air and fishing.

Arkansas is one of the healthiest states in the nation (based on disease and death rate statistics of the Census Bureau).

With its two mountain ranges, its superb national park, two national forests and numerous lakes and highland streams, Arkansas has in the past decade become one of the favorite vacation states of the Mid-West. Approximately 5,000,000 tourists and vacationists from outside the state each year enjoy the attractions of the mountain area of Arkansas, which covers the northwestern third of this big (53,000 square miles) state.

The income from tourists is expected to reach $100,000,000 in 1947. The state's vacation industry is rapidly expanding, and optimistic observers predict that within 10 years this will grow into a quarter billion dollar purse to become an extremely important segment of the state's total income.

Foremost of the national attractions in Arkansas is, of course, Hot Springs National Park. This city, built in the ravines and gorges of a group of the beautiful Ouachita Mountain foothills, 50 miles southwest of Little Rock, has a permanent population of 30,000



Above—View of the Arkansas River near Little Rock.

Circle—Float fishing on an Ozark stream in Arkansas.

and plays host annually to more than a half million visitors from throughout the world. It has 250 hotels ranging from the palatial Arlington and Majestic down to the small, moderately priced hostels.

The feature of this Arkansas Spa is its hot water which flows from 47 hot springs at the rate of a million gallons a day, and at temperatures averaging 145 degrees. These waters are owned and controlled by the United States Government. Hot Springs has in recent years become the center of medical research and treatment therapists in the field of arthritis and rheumatism. One of the greatest army and navy hospitals on earth is at Hot Springs and in it a substantial number of the services' serious arthritic cases are treated.

A five minute drive out of Hot Springs westward the tourist finds two beautiful man-made lakes nestling in the hills—Lake Hamilton and Lake Catherine with a shoreline extending for 350 forest studded miles.

Eureka Springs, at the top of the Ozarks in North Arkansas, is another of America's unique resort cities. It is built into a mountainside and has supplied Ripley with at least two dozen of his famous oddities. Two of the finest resort hotels in the Mid-West are at Eureka Springs. They are the Crescent and Basin Park, catering to summer residents. The streets of this Swiss-like city wind steeply up and down the mountainside, never crossing each other, and are lined

Above—Arkansas is one of the greatest fresh water fishing states in the country.

Right—Largest Magnolia tree in the world. It stands at Washington, Ark.

with shops displaying curios and craft items made in the region. Eureka Springs offers mineral baths, mineral drinking water from 50 springs, swimming and boating on Lake Leatherwood, cabaret entertainment, cave exploring, hiking, riding, and moonlight hay rides along the mountain top roads.

The Ozark and Ouachita National Forests are crisscrossed by splendid state highways, and fine gravel forest roads make an interlocking network. The Ozark National Forest is north of the Arkansas River valley and the Ouachita Forest is south of the valley.

Two resort areas are outstanding in the Ozark National Forest. At White Rock, reached over a forest road from Highway #71 south of Mt. Gaylor, the government has built cabins, rustic mountain restaurants, picnic facilities and a number of shelter houses on the flat crest of a mountain overlooking one of the most picturesque reaches of the Ozarks. At Blanchard Springs, which is 40 miles east of Marshall on Highway #65, a tremendous spring has been dammed, waterfalls have been created, camping cottages and other facilities constructed. Rainbow trout may be

Below—Oaklawn Jockey Club. The race track encircles a golf course. In the distance can be seen Hot Springs National Park.

Left—Eden Falls of Northern Arkansas is one of six in a thousand foot stretch of Lost Valley which also contains two vast caverns.

taken from Mill Creek in Blanchard Springs and a family of seven may house itself free of charge in one of the stone cottages above clear, swift, running Sylamore Creek.

The Ouachita area is noted for the federal government developments at Mount Magazine and Shady. At Mount Magazine a great lodge has been built on the brow of the highest peak in the state, offering splendid vacationing facilities. A short distance down the mountainside is Cove Lake for fishing, swimming and boating. The Shady area is a development similar to the one at Blanchard Springs. It has lakes and cottages, picnic areas and man-made beauty utilizing the hills and streams of the Ouachitas. Arkansas' five well-established State Parks draw hundreds of thousands of visitors annually. The best known is Petit Jean near Morrilton on Highway #64. It is on a Ouachita mountain top and ranks with the best State Parks in the land. Other State Parks are Lake Catherine, Devil's Den, Buffalo River and Crowley's Ridge.

The diversity of Arkansas' agriculture and natural resources has drawn the interest of millions of travelers. One of the largest plantations in the world is at Wilson, Arkansas and the magnificent plantation home is one of the sights on it.

In Southeastern Arkansas our ricelands make a beautiful panorama from spring to fall, and the modern scientific processing of rice at Stuttgart is a tourist attraction of high order. Arkansas rice is grown on the Grand Prairie and the production area is extending rapidly northward so that now the State is

Circle—Lake at Petit Jean State Park.

Below—A successful Arkansas goose hunt.

third in the nation in the production of this white, highly nutritious grain. One of the three rice mills in the nation which preserves all of the vitamins in processing rice is at Stuttgart.

In the fall this Grand Prairie riceland is excellent for duck shooting. Each November sports celebrities gather at Stuttgart for the National Duck Calling Contest which is judged by such famous duck shooters as Wallace Beery of Hollywood, and Chicago and New York sports writers.

Sights that will beckon from the highways and city streets of this versatile, attractive state include the strawberry picking in White county, the pottery plant at Camden whose products are sold in such marts as Marshall Field and Macy's, the goat cheese plant at Harrison making Roquefort type delicacies, the jumbo watermelons of Hope, the doll and china workers at Gurdon, and the great aluminum industry southwest of Little Rock.

The diamond mine at Murfreesboro is one of the great geological phenomena of history; the archery plants at Little Rock and Pine Bluff, the poultry area around Springdale and Fayetteville, the beautiful University of Arkansas campus at Fayetteville, football in the fall and golf the year 'round offer attractions of wide variety.

Record appropriations for improving and maintaining the state parks were approved by the 1947 General Assembly, and on the master plan for extension

Above—Wild Turkeys and Deer.

Below—Ducks rise from an Arkansas feeding ground.

Right—Famous magnolia bordered bath house row at Hot Springs National Park, Ark.

and improvement of state highways full consideration has been given to accessibility of all resort and playground areas to transcontinental traffic as well as homefolk.

Aside from its purely recreational value the Ouachita National Forest is noteworthy from a geological standpoint. The Ouachita Mountains have been classed by geologists as a western extension of the ancient Appalachians. The range is formed in long narrow plateaus with undulating summits rising in peaks 1,000 to 3,000 feet above sea level.

Largely to open to tourists an opportunity to study the interesting geological formation of the region, the Forest Service has completed 1,500 miles of excellent roads. In addition, the section is readily accessible to important population centers in neighboring states.

It is a comfortable two days' drive from Jacksonville, Atlanta, Cincinnati, and Chicago by excellent roads, and is but a day's distance from Dallas, New Orleans, St. Louis, and Kansas City.

Few regions surpass this one in interest as well as beauty, and the climate combines with the scenery in attracting visitors to the land of the Ouachitas. The winters are short and definitely mild. Freedom from humidity makes for a pleasant climate throughout the summer.

Right—An Arkansas woodland bridge.

Below—Swimming pool at Jonesboro, one of many municipally owned swimming places in Arkansas.

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ARKANSAS IS TELLING THE WORLD ABOUT ITS PROGRESS AND ITS OPPORTUNITIES WITH PROPERLY PLANNED CREATIVE LITERATURE . . . THE "ARKANSAS STORY" IS DRAMATIC AND WE ARE PROUD TO PLAY A PART IN PRESENTING IT . . .

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Tobacco, Sixth Southern Industry

by
Caldwell Walker
Feature Editor

ROOTED in the South, actually as well as figuratively, tobacco manufacturing shows no sign of retiring from the upper crust of Southern industrial production, either in volume or importance.

Giving way to wartime need, it is true that some ground was lost by this industry in the matter of rank between the years 1939 and 1945. At the same time, its rate of output in the face of drastically restricted facility expansion, and its showing since the end of the war leave little doubt that it is out to regain whatever prestige it may have temporarily relinquished during the years of emergency.

For many years Tobacco ranked among the first four Southern manufacturing industries, usually following close behind Food, Textiles, and Petroleum-Coal, or else vying with one or the other of these leaders for higher rank. In 1945, for the first time in many years, Tobacco dropped from fourth into sixth place, behind Chemicals and Transportation Equipment.

Southern Industries in Order of Production in 1939

Food	$2,096,366,000
Textiles	1,431,798,000
Petroleum-Coal	1,081,595,000
Tobacco	1,034,066,000

Southern Industry Rank, 1945

Food	$3,813,415,000
Textiles	2,343,371,000
Chemicals	2,042,962,000
Petroleum-Coal	2,013,693,000
Trans. Equipment	1,771,928,000
Tobacco	1,621,121,000

Transportation Equipment is already known to have skidded from the production heights to which it was catapulted by the nation's aggressive bid for aerial warcraft which played so large a part in winning the war. In the case of Chemicals, however, outcome of the rivalry is far from settled, and the contest that looms betwen these two giants of industrial production promises to be a display well worth watching.

Both Tobacco and Chemicals are spurred forward by growth tendencies in which the true potentials are hard to appraise or compare. Both have excellent growth records. Tobacco has marked up steady growth throughout the life of the nation. The growth of Chemicals, while of more recent date, has been even more spectacular.

For 1946, complete records are not yet in for Chemicals. They are available, however, for Cigarettes. The evidence turned in presents an ambitious mark for Chemicals to shoot at.

Manufacturing in general is assumed in practically all estimates to have lost some ground in 1946 as compared with 1945, largely by reason of reconversion delays and widespread strikes. If completed records substantiate these estimates, then the cigarette industry promises to stand out conspicuously among any other exceptions that may be found—for Cigarettes gained instead of losing ground between 1945 and 1946.

Tax paid production of cigarettes increased from 268 billions in 1945 to 322 billions in 1946, an increase of better than 50 per cent. This phenomenal gain is, of course, not commensurate with actual production. Diversion into domestic channels of billions of smokes that formerly had gone overseas tax free accounted for the major portion of the increase. Nevertheless, there was also a healthy rise in over-all production which was stepped up from 332 billions in 1945 to 351 billions in 1946—an actual production gain of over five per cent.

While cigarettes do not constitute all of the tobacco industry, they are such a major portion that their ups and downs universally register the ups and downs of the industry as a whole. Both cigars and miscellaneous tobaccos did little more than hold their own, both between 1939 and 1945, and between 1945 and 1946. The fluctuations of these, however, count for little so far as comparisons are concerned. For many years there has been a perceptible decline in consumer use of cigars, plug tobacco, pipe tobacco, and snuff, in favor of cigarettes. This decline seems to have been halted, temporarily at least between 1945 and 1946, doubtless by reason of cigarette shortages that occurred during part of the period.

In the case of Tobacco, the South does a good job of utilizing a natural resource. While the region does not process all the tobacco leaf it grows, such an accomplishment is scarcely to be expected with respect to an exclusive product. The South produces over 92 per cent of the domestic tobacco crop. It processes yearly between 80 and 85 per cent of the nation's total production of both cigarettes and miscellaneous tobaccos. Of cigars, for which large imports of tobacco are brought in, the South grows a much smaller percentage of their entire content—around 25 per cent—and processes approximately the same proportion.

North Carolina leads all states in output of cigarettes accounting for about 50 per cent of the nation's production. Virginia is second with over 30 per cent. Kentucky also is a substantial producer.

In miscellaneous tobaccos, North Carolina is again the leader, followed by Kentucky, Virginia and Tennessee. Florida outranks all other Southern states by a wide margin in production of cigars.

This is the sixth of a series of staff articles appearing in the MANUFACTURERS RECORD *showing the growth of the major manufacturing enterprises in the South.*

The records show that more than 100 new tobacco manufacturing establishments were added in the South between 1939 and 1945. Practically all of these, however, were very small plants devoted chiefly to manual production of cigars. As a whole the tobacco industry was critically handicapped for expansion during the war by priority restrictions, and accomplished its huge production without benefit of facility renewal or addition. For this reason, if for no other, some plant expansion and equipment replacement may be expected in nearby years.

Expenditures for plant and equipment in normal years before the war ran between $7 million and $10 million annually. Depreciations and obsolescences during the past six years could easily justify the doubling of normal outlays for several years to come.

In several respects the tobacco industry is unusual. For one thing, it contributes not only to a strong human desire and substantially to the economic welfare of the region in which it is grown and processed, but also performs a huge service in contributing to public revenues. Long-trend records will show that out of every dollar of production value arising from tobacco, from 70 to 75 cents consists of costs of materials, fuel and supplies. This figure, however, does not tell the whole story. Included in these material costs are excise taxes amounting to 45 cents for each production dollar.

Breakdown of Production Costs

Costs of materials	22.7 cents
Costs of fuel and power	.2 cents
Excise taxes	44.6 cents
Total material cost	73.5 cents
Wages	5.2 cents
Salaries	1.4 cents
Total factory costs	80.1 cents
Operating margin	19.9 cents
Production dollar	100.0 cents

Operating margin, which includes provision for general expense not charged to factory operation, federal and state taxes other than excise, and profit, compares favorably with other industries. It is true that less goes into the Southern till through wages and salaries than in most other Southern industries but the deficiency is compensated by the incomes accruing to Southern farmers from the leaf that enters into cost of materials.

From every angle this is one of the most important industries of the South. It is relatively stable in so far as business cycles are concerned, showing growth through depression as well as prosperity. Its outlook has always been an uplook. Cigarettes are now being consumed in the United States at the rate of two and a half packs per person per week; and like production itself, the rate of per capita consumption has long been on a steady upgrade.

Other industries will have to perform at extraordinary levels to outstrip or even match this basic activity of the South.

COURTESY OF THE NATIONAL GEOGRAPHIC SOCIETY

Taking moving pictures of human vocal cords

SAY "AH-H-H" TO THE BIRDIE . . . *This Bell Telephone Laboratories scientist is taking moving pictures of the young woman's vocal cords, to get new knowledge about the voice. Such knowledge is useful in telephone transmitter design.*

He is using a Fastax camera, developed by the Laboratories. This camera, the same kind that was used to photograph atom-bomb tests at Bikini, can operate up to the rate of 8000 pictures a second.

Bell Telephone Laboratories learned some interesting things about speech from high-speed pictures of vocal cords.

THE job of Bell Laboratories is to devise and develop facilities which will enable two human beings anywhere in the world to talk to each other as clearly as if they were face to face—and to do this economically as well as efficiently. To this end, Bell Laboratories study everything from the most fundamental matters, such as the mechanism of speech and hearing and the molecular structure of copper wire and rubber insulation, to the detailed design of equipment. The result is better service, at lower cost, for everyone who uses the telephone.

BELL TELEPHONE SYSTEM

Southern Business Outlook

(Continued from page 72)

tion for the trade area served out of Dallas.

C. J. McNamara, general manager for Coca Cola in Dallas, said construction would begin early next year on the 10.6-acre site served by the Missouri-Kansas-Texas Railroad. The new building will cover 150,000 square feet of floor space.

One of the first industries to locate in the growing industrial area was Coca Cola's syrup plant which operates for Texas, Oklahoma, Colorado and sections of Arkansas, Louisiana and Kansas.

Pepsi Cola is currently engaged in modernizing and installing new equipment in its Dallas plant to the extent of $250,000. Appointed in July by New York officials of the company to head its Dallas plant and eight warehouses in the North Texas area is Olak K. Tackle, World War II colonel who succeeds able J. Frank Carter, dispatched to West Texas to work on new trade for the wide area.

Texas Engineering and Manufacturing Company, Grand Prairie, bid a high of $322,000 in July for the bankrupt Globe Aircraft Corporation, Fort Worth, and has announced that it will continue manufacture of a light personal plane, the Globe Swift, as soon as materials and machinery can be moved to Grand Prairie.

TEMCO produced the light planes under a sub-contract in its leased 500,000 square feet of the old North American Aviation plant at Grand Prairie, between Dallas and Fort Worth.

Closing of The Texas Company West Dallas refinery, which employs about 250 persons and produces a daily crude output of 15,000 barrels, has been slated for next year. J. S. Leach, company vice president at Houston, said the move is designed as a change more than as an abandonment since the company plans to use the site as a terminal and warehouse facility on completion of the petroleum products pipeline now under construction between Beaumont and North Texas. The pipeline project is a joint contract of The Texas Company and the Magnolia Pipeline Company.

Elsewhere in Dallas, the Charles W. Breneman Company, which headquarters its pioneer manufacturing plant for window shade cloth, blinds and shade rollers in Cincinnati, has moved into a new $150,000 plant which will manufacture for Southwest retailers. Marvin L. Walter is the Southwest manager for the company. . . . Appraisal Engineering Service, Inc., has awarded Inge-Hayman Construction Company, Dallas, contract for construction of a one-story district office for Sharp & Dohme, national manufacturers of pharmaceutical and biological products. The office will occupy 20,000 square feet of floor space.

Tennessee News

BY GEORGE I. WHITLATCH

While Tennessee's industrial expansion during the first six months of 1947 did not equal the level achieved in the same period last year, estimates indicate that to June 30, some $20 million has been spent or committed for investment in 134 new industrial plants, or expansion of existing plants.

Previous trends toward widespread distribution of new industries over the state are still evident. Of the 81 new industries included in the present survey, 48 are locating in 41 towns and cities outside of the state's four metropolitan areas. The remaining 33 are in major cities, with Memphis obtaining 17, Chattanooga and Nashville six and seven respectively, and Knoxville three.

Not fewer than 35 different products will be made or processed by 81 new plants established during the first six months of this year. Among these are plastics, hosiery, garments, candy, textiles, shoes, metal products, cheese and other foods, farm equipment and other machinery, electrical products, wood products of variety including furniture, chemicals, smoking pipes, textile mill supplies, motor boats, auto equipment, burial vaults, toys and costume jewelry.

Outlook for continued and comparable development for the near future appears bright. General Dry Batteries Inc., Cleveland, O., has announced selection of Memphis for a new plant to employ over 300. The Somerville Building Corp. has signed a contract to erect a 30,000 sq. ft. factory building in that city for an incoming manufacturer. Cookeville has announced acquisition of two new plants. Ridge Textile Co. of Chattanooga plans an additional location in Athens, to manufacture hosiery. Dayton Foundry & Stove Works, organized in that city by a group of local businessmen expects to be in production promptly. Cliquot Club Bottling Co., a new Memphis concern, has applied for charter. Glisson-Brundize Milling Co., a Dresden addition started by local capital, is installing equipment for crushing and mixing a wide variety of feedstuffs. Brown's Dairy of Morristown has completed installation of a new pasteurization unit. W. J. Savage of Knoxville is constructing a new plant for the manufacture of grain mill machinery.

Louisiana Business Review of Louisiana State University Bureau of Business Research reports slight slackening of business activity in its last report.

Mississippi Business Review of Mississippi State College Business Research Station reports a slight drop from the preceding month in general business activity.

Texas Business Review of The University of Texas Bureau of Business Research records a slight downward trend in its most recent report.

For the nation as a whole, the U. S. Department of Commerce notes a high level of activity, close to or coinciding with the postwar peak, but also sees that in some lines operations were on a downward and somewhat contracting basis. Predictions are becoming fewer that business is heading into a recession, and most forecasts now are for expanding activity, at least in months immediately ahead.

1947 Plant, Equipment Outlays

American business, exclusive of agriculture, expects to spend about $3,800,000,000 during the third quarter of 1947 for the construction of new plant and the purchase of new equipment, according to the quarterly survey made jointly by the Securities and Exchange Commission and the Department of Commerce. This record amount is $100,000,000 more than the expenditures planned for the second quarter, and $600,000,000 greater than actual expenditures for the first quarter.

From the beginning of 1945 to the end of 1946 there was a steady increase in expenditures for new plant and equipment. Expenditures during the first quarter of 1947, however, declined and were about $600,000,000 below the previous quarter. During the next two quarters business anticipates increasing its expenditures, with the $3,800,000,000 of expenditures planned for the third quarter of 1947 approximately the same as those in the last quarter of 1946. These were at an annual rate almost 85% above the amounts expended in 1941 and more than 60% higher than in 1929, the two prewar highs. Adjusting for the substantial price increases, expenditures during the third quarter would still be at a higher rate than in both those years.

Planned expenditures by manufacturing companies for the third quarter of 1947 accounted for 45% of the total for all industry and are estimated at $1,700,000,000. This amount is approximately the same as the corresponding quarter of last year, but somewhat below the peak reached during the last quarter of 1946. During the third quarter of 1947 manufacturing companies expect to spend about the same amount as in the second quarter. Same is true for mining, commercial and miscellaneous, and transportation companies other than railroads, which with electric and gas utilities, expect to increase their capital outlays.

MALVERN-- ONE OF ARKANSAS' LEADING INDUSTRIAL AND AGRICULTURAL CENTERS!

Located in the foothills of the Ouachita Mountains, Malvern has a population of approximately 10,000 people. Of this number 85% are white, 15% colored (99½ per cent native born).

45 miles Southwest of Little Rock; 22 miles Southeast of Hot Springs; 20 miles Southwest of Benton, with the largest Bauxite mines and Alumina plant in the United States. 30 miles from Arkadelphia with 2 colleges.

AGRICULTURE and INDUSTRY WELL BALANCED!

AGRICULTURE: This county has a land area of 392,320 acres drained by the Ouachita and Caddo Rivers and their tributaries, and a small section by the Saline River. The soils comprise sandy loam, alluvial bottoms and red clay uplands. Some of the principal crops are corn, cotton, oats, Sweet & Irish potatoes, tomatoes, peanuts, and all forage and feed crops. Large varieties of fruit and vegetables are also grown. It is especially adapted to poultry, dairying, livestock and hog raising. The county has a total of 1770 farms with an average of 80.2 acres per farm valued at an average of $28.21 per acre. The gross income on all farm products, dairying, livestock, poultry, horticulture, and forest products was approximately $3,360,000 for the year 1946: approximately $700,000 of this amount was derived from livestock, poultry and dairying industries.

INDUSTRIES: The city is a leading industrial center located in the heart of one of the largest electric power pools in the Southwest. It has an abundance of water and natural gas. The source of power is from two hydro-electric dams located on Lakes Catherine and Hamilton, ten and fifteen miles from Malvern. The forty leading industries in this vicinity include: American Excelsior Company, Acme Brick Company, with two plants, Baroid Sales Division of the National Lead Company and Magnet Cove Barium Corporation, both of which mine and refine Barite, Better Built Cabinet Company, Bray Bros. Lumber Manufacturing Company, Brown-Payne Lumber Company, Clem Mill & Gin Company, Clem Hatchery, Clem Bottling Works, Coogan Gravel Company, Cuffman Lumber Company, City Laundry, Hot Spring County Cold Storage Company, Hot Spring County Manufacturing Company, a textile mill owned and operated by International Shoe Company, Kidder Saw Mill, Malvern Cabinet & Boat Shop, Malvern Sand and Gravel Company, Malvern Machine & Iron Works, Malvern Baking Company, Malvern Ice Company, Malvern Daily Record, Malvern Meteor Journal, Malvern Brick & Tile Company, Marshall Bros. Lumber Company, Prickett Dairy Company, R. D. Roland Ready Mix Concrete Company, Malcrete Products, Aluminum Company operated by Reynolds Metals Company, Southern Ice Company, Sheldon Handle Company, Stinson Welding Company, A. B. Cook Lumber Company, Van Veneer Company, Lashlee Welding Company, Whitehouse Uniforms, Inc. (a plant under construction now), Rutherford Saw Mill, and Walker-Harbinson Gravel Company. These industries employ approximately 3200 people with an annual payroll of approximately $6,000,000.00.

MINERALS: Malvern is located approximately eight (8) miles from Magnet Cove which has one of the largest mineral deposits in Arkansas.

Barite, which is mined in the Magnet Cove Area, is produced by two (2) of the world's largest producers, Magnet Cove Barium Corporation and Bariod Sales Division of the National Lead Company. These two (2) Companies can furnish glass companies with manufacturers grades.

Titanium Dioxide (rutile) occurs in abundance, and production is assured on a large scale in the near future.

Nepheline Syenite Ore is available in abundance as well as a large quantity of Tripoli. Bentonite has been mined, and indications are that it will be developed on a dependable scale.

Feldspars occur frequently, and a test shows that the material is comparable to production elsewhere as in the Carolinas.

Molybdenite mines are being opened up and promising quantities of the ore are found.

Micas have also added much interest in this section: however, no actual production has been made.

Large quantities of Pyrite and Limestone, a wide range of abrasives such as garnet, schorlomite, and quartz are available within a few miles of Malvern. A high grade of iron oxide in the form of Magnetite, which occurs in two or more of the rare earths; a wide variety of decorative building stones; and the fertilizer elements, potash and phosphorous have been noted in sections of this area.

An unlimited quantity of high grade refractory clays for ceramic uses and for the manufacture of brick and tile have been found in the western part of the county. An acceptable grade of Lignite which was mined and utilized during World War II for the production of dyestuffs and resins has also been mined in this section. Lead and Zinc are also found in this section.

Excellent Transportation - Power - Fuel - Water - Tax Rate

Fine Municipal Improvements, Schools and Churches

SERVED BY MISSOURI PACIFIC AND ROCK ISLAND RAILROADS, truck and bus lines, with quick delivery to all Mid-West, Gulf, South and Southwest points.

ARKANSAS POWER AND LIGHT CO. provide unlimited supply of power at lowest rates.

ARKANSAS-LOUISIANA GAS COMPANY serves area with natural gas through two large pipe lines at very low rates.

MUNICIPALLY OWNED WATER SYSTEM grants very low rates to industries. Moderate tax rates. Mild climate.

Write for Detailed Information for Your Particular Industry

MALVERN CHAMBER OF COMMERCE • MALVERN, ARKANSAS

South's Construction by Types

	July, 1947 Contracts Awarded	July, 1947 Contracts to be Awarded	Contracts Awarded First Seven Months 1947	Contracts Awarded First Seven Months 1946
PRIVATE BUILDING				
Assembly (Churches, Theatres, Auditoriums, Fraternal)	$5,242,000	$7,613,000	$15,466,000	$17,881,000
Commercial (Stores, Restaurants, Filling Stations, Garages)	3,862,000	8,342,000	26,745,000	46,993,000
Residential (Apartments, Hotels, Dwellings)	31,505,000	27,911,000	158,273,000	198,995,000
Office	2,701,000	6,579,000	22,822,000	14,839,000
	$43,310,000	$50,445,000	$223,306,000	$278,708,000
INDUSTRIAL	$3,080,000	$86,523,000	$237,361,000	$238,104,000
PUBLIC BUILDING				
City, County, State, Federal and Hospitals	$18,476,000	$104,926,000	$83,653,000	$101,057,000
Housing	87,000	160,000	87,000	2,466,000
Schools	13,253,000	63,668,000	94,131,000	57,473,000
	$31,816,000	$168,754,000	$177,871,000	$160,996,000
ENGINEERING				
Dams, Drainage, Earthwork Airports	$13,671,000	$17,350,000	$121,871,000	$153,844,000
Federal, County, Municipal Electric	919,000	11,192,000	11,201,000	18,985,000
Sewers and Waterworks	7,080,000	24,838,000	37,902,000	34,268,000
	$21,670,000	$53,380,000	$170,974,000	$207,097,000
ROADS, STREETS & BRIDGES	$46,444,000	$32,323,000	$224,289,000	$204,788,000
TOTAL	$166,320,000	$391,425,000	$1,033,801,000	$1,089,693,000

Southern Contracts in July Valued at $166,320,000

(*Continued from page* 74)

month of last year. The figure for June was $53,503,000; for July a year ago, $48,184,000.

The current July private building aggregate is made up of $31,505,000 in residential work, $5,242,000 in assembly buildings such as churches, theatres and auditoriums, $3,862,000 in commercial buildings and $3,701,000 for office type structures.

The residential valuation is below that for June and also of July, 1946, although it approximates the total for May and is from twice to almost three times the totals for such work in the other months of this year. The last time assembly awards neared the July figure was in April, 1946, when the figure amounted to $5,116,000.

The July industrial construction total is the lowest in four months, as is the public building figure. The July heavy engineering construction figure is on the near side of a peak reached in May when the total for such work in the South was $44,538,000.

Some idea of the dollar value position of current construction contracts and that for similar periods of peace years may be gained from a comparison of the figures for the first seven months of 1938, 1939 and 1940, the three years immediately preceding World War II, and 1946 and 1947, the two years immediately following the second modern world conflagration.

The total for the first seven months of 1938 was $426,343,000. This rose to $537,582,000 in the first seven months of 1939 and in the comparable months of 1940 went to $545,590,000, a figure which at the time was practically an all-time record except for the 1930 period when pipeline construction bolstered southern contract values.

The total for the first seven months of 1946 was $1,089,693,000 and the current seven-month figure is also above the billion dollar mark with $1,033,801,000. Wartime seven-month totals were: 1941—$1,523,280,000; 1942—$2,715,328,000; 1943—$986,395,000; 1944—$487,021,000; 1945—$619,560,000. Two of these years were ahead of the current figure and one of those was in a year when preparation for war was the accepted theme.

The noticeable drop in wartime construction in 1943, 1944 and 1945 was due to stringent regulations which practically stifled private and highway construction. Federal controls, in one form or another, were in effect until comparatively recent months. The Housing and Rent Act of 1947 resulted in abolition of controls on most types of construction.

Federal permits, however, must be obtained for structures to be used for amusement, recreation or entertainment purposes, either private or public. A new construction limitation regulation known as "CRL" replaces VHP-1, which was in effect from March, 1946.

The list of structures or buildings for which authority must be requested includes: Amphitheatres, amusement arcades, piers, parks, arenas, assembly halls for amusement or recreation purposes, athletic field houses, band stands, bars, bathhouses for swimming, baseball parks, billiard and pool parlors, bleachers, boardwalks, boat clubs, bowling alleys, cabanas, canteens, carnivals, cocktail lounges, country clubs, community recreation buildings, dance halls, gambling establishments.

Also, grandstands, gynasiums, golf clubs and golf courses, golf driving ranges, music shells, night clubs, race tracks of all kinds, recreational clubs of all kinds, riding academies, rodeos, roller coasters and similar devices, shooting galleries, skating rinks, seasonable camps used primarily for amusement or recreation, slot machine establishments, stadiums, swimming pools, table tennis establishments, taverns, theatres and any other building used in connection with an amusement or recreational project.

State and country fair buildings and structures for non-profit agricultural, livestock or industrial exposition or exhibitions, are exempted under the new regulation. Buildings for any commercially operated fair, exposition or exhibition will require permits. Lighting systems, sidewalks, driveways, bridges are not included in the restrictions, although walls and fences built principally of wood are.

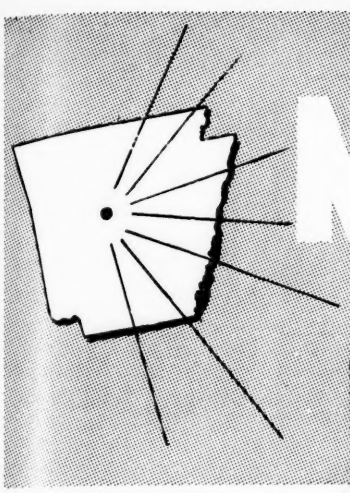
Installation of air conditioning equipment, bars, bowling alleys, furnaces, lighting equipment, marquees, panelling, ventilating equipment, plumbing and certain other types of equipment is covered by the regulation provided they are nailed, screwed, bolted, connected or cemented to the building or installed on a base built for the particular item. Installation of bookcases, booths, partitions and similar items is covered only if attached as part of a structure in such a way that they cannot be removed without damage.

The small job exemption of VHP-1 is

(*Continued on page* 138)

South's Construction by States

	July, 1947 Contracts Awarded	July, 1947 Contracts to be Awarded	Contracts Awarded First Seven Months 1947	Contracts Awarded First Seven Months 1946
Alabama	$5,006,000	$42,170,000	$28,931,000	$35,231,000
Arkansas	1,136,000	4,936,000	32,708,000	42,422,000
Dist. of Col.	1,677,000	36,930,000	27,973,000	10,700,000
Florida	15,828,000	13,293,000	109,798,000	132,369,000
Georgia	11,055,000	11,941,000	98,822,000	88,207,000
Kentucky	1,762,000	6,064,000	15,424,000	37,611,000
Louisiana	23,675,000	25,758,000	71,188,000	52,148,000
Maryland	22,533,000	75,295,000	86,188,000	101,842,000
Mississippi	4,896,000	11,483,000	47,119,000	52,396,000
Missouri	10,211,000	10,839,000	43,941,000	27,765,000
N. Carolina	9,155,000	15,937,000	43,985,000	54,013,000
Oklahoma	3,249,000	7,211,000	18,678,000	39,904,000
S. Carolina	2,712,000	5,371,000	28,450,000	44,889,000
Tennessee	2,694,000	12,580,000	23,297,000	35,755,000
Texas	39,926,000	84,457,000	296,319,000	295,150,000
Virginia	8,603,000	13,350,000	36,507,000	28,829,000
W. Virginia	2,252,000	13,815,000	24,393,000	10,162,000
TOTAL	$166,320,000	$391,425,000	$1,033,801,000	$1,089,693,000



MORRILTON

Ideal Site for SMALL INDUSTRY!

★ **MORRILTON is on the main line of the central division of the Missouri Pacific Railroad.**

★ **MORRILTON is served (east-west) by U. S. Highway 64, and (north-south) by Highway 9.**

★ **MORRILTON offers unlimited supply of natural gas for industrial use.**

★ **MORRILTON is hub of excellent labor supply capable of quick training for specialized jobs.**

★ **ARKANSAS exempts taxes on new processing industries up to 10 years; workman's compensation law is model to nation; state property assessment rate reduced from 9 mills to 6½ mills this year!**

COTTON, livestock, vegetables, poultry and lumber are the backbone of Morrilton's thriving small industries. The Morrilton Cotton Curb handles annually an average of 25,000 bales while more than 50,000 head of livestock are sold through the weekly auctions and local packing plant.

Morrilton—a city of 5,000—serves a trade territory of 35,000 customers . . . Bank deposits in excess of $5,500,000 are a tribute to the hustling citizens.

If you desire locating a woodworking or furniture plant, or if you are interested in processing vegetables or poultry—check Morrilton first! You'll find a cordial reception and a genuine desire to help you locate profitably.

Petit Jean State Park Attracts Tourists From Every State In Nation!

FREE OPPORTUNITY! To the right person, Morrilton will donate a choice hotel site on U. S. Highway 64. This site is in direct line of thousands of tourists who flock to Petit Jean State Park—improved by the federal government at a cost of $1,750,000. Each year, thousands more discover this exciting mountain with its lodges, cabins, lakes and boats. Act now if you are interested in this sound investment! Write the Morrilton Chamber of Commerce for details.

MORRILTON CHAMBER OF COMMERCE

IN THE HEART OF THE FERTILE ARKANSAS RIVER VALLEY

Town of opportunity

FACTORY SITES AMPLE WATER AMPLE POWER AMPLE LABOR LOW TAX RATES RAW PRODUCTS TRANSPORTATION NEARBY MARKETS

MARIANNA

ARKANSAS

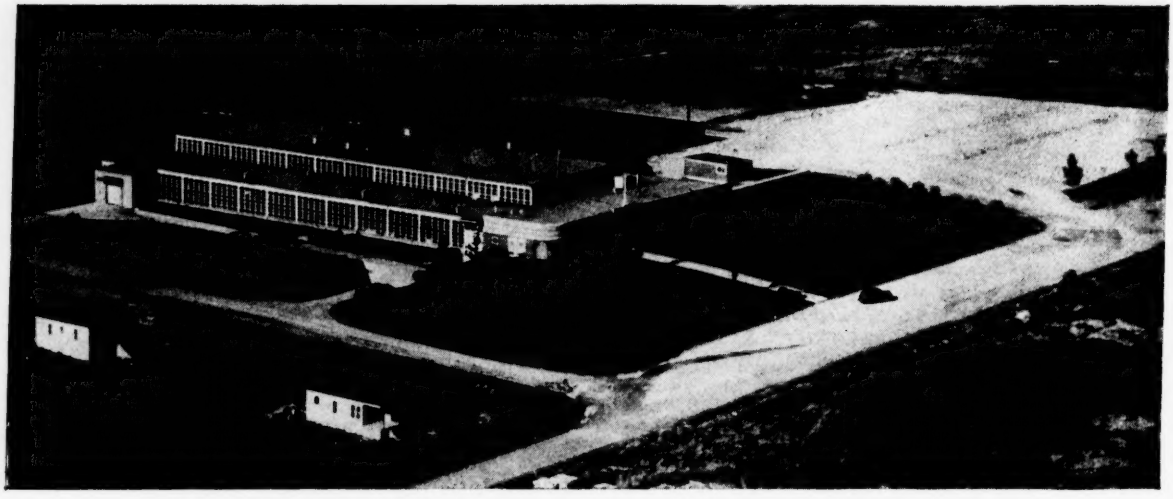
Invites industries to share its

Varied products of delta and second-delta soil. Excellent highways — good schools — churches. Mild climate — long growing season — trucking. Cotton — livestock — pastures — timber — corn — rice. Pecans — peaches — soybeans — small grains. Lakes — streams — woodlands. Fishing — boating — hunting. New airport — close in. Banking facilities. Steady growth. Friendliness. Happy living. Progress. Health.

Marianna and Lee County
Chamber of Commerce
Marianna, Ark.
on
U. S. Highway 79
(Gateway of the Southwest)
State Highway 1

Home of
Cotton Experiment Station
College of Agriculture, U of A
and
Beautiful Bear Creek Lake

TRIMFOOT *Selects* NEWPORT!



TRIMFOOT Company, manufacturers of Trimfoot Shoes for children, selected Newport, Arkansas for its School Shoe plant. Production is now under way in a temporary location. Plans have been approved for the construction of a streamlined building at Newport, similar to the company's modern plant at Trimfoot Terrace, Farmington, Missouri, which is shown above.

WHY

$2,459,000 *is being spent IN*

NEWPORT

ARKANSAS *for*

NEW INDUSTRIAL GROWTH

ABUNDANT SUPPLY OF NATIVE LABOR:
Aluminum Tube Manufacturer and Shoe Factory Plus Oil Mill Compress, Lumber Industries Endorse Our Labor as Most Adaptable

ADEQUATE SUPPLY OF POWER, GAS AND WATER:
Electric Transmission Lines from Louisiana, Norfork Dam and TVA Converge at Newport. Gas piped at Low Rate From Louisiana Field.

CHOICE INDUSTRIAL BUILDINGS AND SITES:
Ready for Immediate Occupancy. Buildings As Large as 45,000 Square Feet of Floor Space. Smaller Factory Sites Ready.

TRANSPORTATION FACILITIES:
Two Main Line Railroads, Four Motor Freight Lines. Navigable River

CO-OPERATION PROVEN AND LAWS PROTECT EMPLOYERS:
The attitude of Newport business men have started our industrial boom and through the cooperative efforts our population has increased to 6,700 since last Federal Census. Sentiment Voted in Favor of Industrial Expansion on Several Occasions.

For Further Information Contact

NEWPORT CHAMBER OF COMMERCE

—Write SAM WALTON, President

Southern Contracts in July Valued at $166,320,000

(*Continued from page* 134)

retained under the new regulation in a modified form. This provides that any amusement, recreational or entertainment project can be constructed without a permit if the cost is less than $2,500. If the project involves reconversion of a residential structure, the exemption is only $200.

Return of the construction industry to a free market after the nearly six months of controls is being accomplished in an orderly manner, says the Associated General Contractors of America, which after a survey of its chapters in thirty-three states observed that its managers had "noted no large or general immediate increase in industrial, commercial or institutional construction, but were optimistic about the outlook for the months ahead."

"The indications are that the volume of non-residential construction, long held back by federal control, will increase gradually as local problems of labor and materials shortages are solved and costs are stabilized," it was pointed out by H. E. Foreman, managing director of the national contractors organization.

"In some areas these problems appear to have been answered satisfactorily and construction volume has already increased," he stated. "Chapters in California, Indiana, Maryland, Michigan, Montana, North and South Carolina, Ohio, Oregon, Pennsylvania and the District of Columbia report a substantial rise in the amount of work under way. Some other areas report small increases in construction volume."

Comments from the various southern states, as issued by Mr. Foreman, included the following:

Alabama—"There are indications that the volume will increase within a few months."

District of Columbia—"Expect increase soon to be 100 per cent. Expect a shortage of skilled mechanics to be serious."

Florida—"Decontrol came too late this year for a large hotel program before season. Future volume predicted. Single family and apartments totaling 7,400 units started since January 1 constitutes main volume. Residential and rental unit starts accelerated since July 1."

Georgia—No change.

Kentucky—No change.

Louisiana—No change.

Maryland—Definite improvement in construction coming on the market.

Mississippi—Five to 10 per cent increase.

Missouri—Kansas City—"Small increase in small commercial construction and some apartment construction." St. Louis—"Undoubtedly some projects will be completed on which partial approval covering foundations and structural frame had been granted by Civilian Production Administration."

North and South Carolina—"Additional work schedule for virtually immediate release represents very strong increase."

Oklahoma—"Plans have been completed on a record volume of contemplated commercial and industrial construction. Possible the next two weeks will show a more decided change."

Tennessee—"Anticipate small increase next 30 days."

Texas—Dallas—"Federal decontrol has resulted in announcement of a substantial volume of proposed new construction in the Dallas area including three large office buildings but time is too short yet for decontrol to have brought any actual business into the market. Decontrol has apparently stimulated multiple unit housing for rental purposes tremendously in this area." Houston—No change.

Virginia—No change.

West Virginia—"Within the next 60 days there should be some substantial increase."

Third quarter expenditures for new plant and purchase of new equipment will amount to $3,800,000,000, says the Securities and Exchange Commission and the Department of Commerce. Planned expenditures by manufacturing companies for the third quarter will account for 45 per cent of the total for all industry and are estimated at $1,700,000,000. Railroads, electric and gas utilities expect to increase their capital outlays. Mining, commercial and transportation companies, other than railroads, are expected to spend about the same in the third quarter as in the second.

Building material prices are on a downward trend, according to the Building Products Institute, which says the upward movement ended in mid-March of this year and have been leveling off since then with slight variations. Prices have shown a decline in six of the last nine weeks, the Institute observes.

Roads, Streets, Bridges

	July, 1947 Contracts Awarded	July, 1947 Contracts to be Awarded	Contracts Awarded First Seven Months 1947
Alabama	$ 1,127,000	$ 1,470,000	$ 3,888,000
Arkansas	655,000	600,000	655,000
Dist. of Col.	409,000	160,000	14,374,000
Florida	2,517,000	2,073,000	7,398,000
Georgia	1,728,000	660,000	5,725,000
Kentucky	612,000	2,280,000	10,886,000
Louisiana	5,268,000	3,456,000	16,690,000
Maryland	4,024,000	2,230,000	15,855,000
Mississippi	2,801,000	1,490,000	15,649,000
Missouri	5,862,000	2,410,000	16,574,000
N. Carolina	2,018,000	2,680,000	15,190,000
Oklahoma	223,000	27,000	4,452,000
S. Carolina	265,000	752,000	8,628,000
Tennessee	650,000	815,000	3,205,000
Texas	12,828,000	8,020,000	68,493,000
Virginia	4,046,000	2,050,000	8,677,000
W. Virginia	1,411,000	1,150,000	7,860,000
TOTAL	$46,444,000	$52,323,000	$224,289,000

Private Building

(Assembly, Commercial, Residential, Office)

	July, 1947 Contracts Awarded	July, 1947 Contracts to be Awarded	Contracts Awarded First Seven Months 1947
Alabama	$ 1,903,000	$ 2,017,000	$ 10,271,000
Arkansas	40,000	330,000	285,000
Dist. of Col.	108,000	.....	624,000
Florida	8,016,000	4,839,000	50,919,000
Georgia	4,784,000	2,091,000	20,240,000
Kentucky	800,000	238,000	1,600,000
Louisiana	1,499,000	7,760,000	10,982,000
Maryland	11,119,000	1,234,000	34,751,000
Mississippi	161,000	865,000	3,450,000
Missouri	1,798,000	303,000	2,284,000
N. Carolina	2,667,000	3,753,000	8,959,000
Oklahoma	.....	249,000	383,000
S. Carolina	754,000	1,602,000	2,343,000
Tennessee	882,000	219,000	7,832,000
Texas	8,408,000	22,899,000	63,989,000
Virginia	371,000	1,913,000	4,323,000
W. Virginia	.....	133,000	31,000
TOTAL	$43,310,000	$50,445,000	$223,306,000

Public Building

(City, County, Federal; Housing; Schools)

	July, 1947 Contracts Awarded	July, 1947 Contracts to be Awarded	Contracts Awarded First Seven Months 1947
Alabama	$ 499,000	$ 3,240,000	$ 4,687,000
Arkansas	149,000	125,000	959,000
Dist. of Col.	947,000	35,245,000	10,165,000
Florida	3,418,000	2,191,000	36,852,000
Georgia	1,149,000	4,669,000	8,547,000
Kentucky	248,000	192,000	966,000
Louisiana	8,644,000	2,002,000	18,191,000
Maryland	1,503,000	65,625,000	17,896,000
Mississippi	1,191,000	7,906,000	7,573,000
Missouri	557,000	710,000	1,572,000
N. Carolina	2,258,000	1,843,000	7,524,000
Oklahoma	633,000	6,375,000	3,829,000
S. Carolina	509,000	2,575,000	2,031,000
Tennessee	688,000	2,127,000	7,145,000
Texas	4,435,000	18,218,000	38,419,000
Virginia	1,827,000	5,327,000	10,518,000
W. Virginia	161,000	10,384,000	997,000
TOTAL	$31,816,000	$168,754,000	$177,871,000

Industrial

(Including Private Utilities)

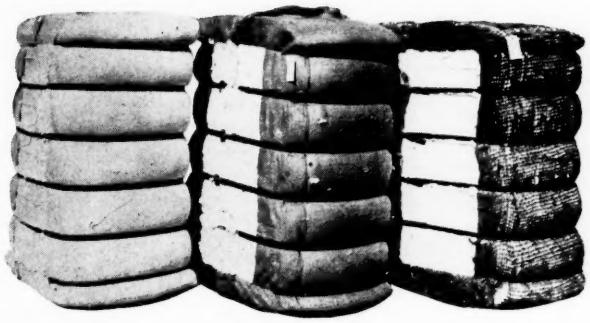
	July, 1947 Contracts Awarded	July, 1947 Contracts to be Awarded	Contracts Awarded First Seven Months 1947
Alabama	$ 1,301,000	$31,223,000	$ 5,133,000
Arkansas	170,000	1,788,000	2,085,000
Dist. of Col.	.....	550,000	25,000
Florida	740,000	1,720,000	7,158,000
Georgia	1,063,000	3,063,000	55,934,000
Kentucky	.....	1,768,000	1,850,000
Louisiana	2,479,000	4,947,000	7,383,000
Maryland	1,309,000	4,486,000	9,205,000
Mississippi	19,000	460,000	3,556,000
Missouri	1,733,000	6,708,000	5,980,000
N. Carolina	1,541,000	3,630,000	7,106,000
Oklahoma	.....	560,000	2,043,000
S. Carolina	666,000	230,000	11,572,000
Tennessee	305,000	1,535,000	3,135,000
Texas	9,130,000	20,905,000	94,035,000
Virginia	1,944,000	2,000,000	7,156,000
W. Virginia	680,000	950,000	14,005,000
TOTAL	$23,080,000	$86,523,000	$237,361,000

Public Engineering

(Dams, Drainage, Waterworks, Sewers, etc.)

	July, 1947 Contracts Awarded	July, 1947 Contracts to be Awarded	Contracts Awarded First Seven Months 1947
Alabama	$ 176,000	$ 4,220,000	$ 4,952,000
Arkansas	122,000	2,093,000	28,724,000
Dist. of Col.	213,000	975,000	2,785,000
Florida	1,137,000	2,470,000	7,471,000
Georgia	2,331,000	1,458,000	8,376,000
Kentucky	102,000	1,586,000	122,000
Louisiana	5,735,000	7,593,000	17,942,000
Maryland	1,578,000	1,720,000	8,481,000
Mississippi	724,000	762,000	16,971,000
Missouri	261,000	708,000	17,531,000
N. Carolina	671,000	4,031,000	5,166,000
Oklahoma	2,393,000	.....	7,971,000
S. Carolina	518,000	212,000	3,876,000
Tennessee	169,000	7,884,000	1,820,000
Texas	5,125,000	14,410,000	31,383,000
Virginia	415,000	2,060,000	5,833,000
W. Virginia	.....	1,198,000	1,500,000
TOTAL	$21,670,000	$53,380,000	$170,974,000

OSCEOLA



HEART OF THE WORLD'S LARGEST COTTON PRODUCING COUNTY

Specifically Invites

AGRICULTURAL PROCESSING INDUSTRIES

Here's What.....

OSCEOLA Has:

- 5000 population
- Largest per capital retail sales volume in U.S.
- Municipal Light and Power Plant
- County Seat of Mississippi County, Ark.
- Situated 50 miles north of Memphis on Mississippi River
- Five cotton gins
- Cottonseed and Soybean Oil Mill
- Main line of Frisco Railroad
- Vegetable canning plant
- Four alfalfa dehydrating plants
- Cotton compress
- Three machine shops
- Abundant labor
- Open Shop

OSCEOLA Wants:

- Mixed Feed Mill
- Cotton Textile Mill
- Garment Factory
- River barge line and port facilities
- Poultry processing plant
- Vegetable oil processing plant
- Cotton Insulation manufacturing plant
- Plastic manufacturing plant
- All industries utilizing Osceola's agricultural resources

Additional information may be obtained by writing the

CHAMBER of COMMERCE

OSCEOLA, ARKANSAS

NEW AND EXPANDING PLANTS

(Continued from page 10)

NORTH WILKESBORO — Wilkes Broadcasting Co., broadcast station.
RALEIGH—Motor Bearing & Parts, Highway 15 A, garage, $12,600.
RALEIGH — Southern Bell Telephone Co., building, $250,000.
RALEIGH—E. E. Morning, building, $18,500.
RALEIGH—A. F. Schiedigen Co., plant.
ROCKINGHAM—R. M. McInnis, building, $19,020.
ROXBORO — Kirby-Jones Motor Co., garage, $46,000.
SALISBURY—White Packing Co., addition, $39,370.
SHELBY — Esther Mill Corp., addition, $23,000.
SILVER CITY—Silver City Poultry Exchange, Inc., building, $35,000.
SOUTHERN PINES—Sandhill Community Broadcasters, Inc., broadcast station.
SPRUCE PINE—Feldspar Milling Co., Inc., $200,000 plant.
WASHINGTON — Tar Heel Broadcasting System, Inc., FM broadcast station.
WINSTON-SALEM — Southern Bell Telephone & Telegraph Co., building, $300,000.
WINSTON-SALEM — Wair Broadcasting Co., FM broadcast station.
WINSTON-SALEM—Krispy Kreme Doughnut Co., plant.
YADKIN — North Carolina Finishing Co., warehouse and a laboratory, $66,000.

OKLAHOMA

CLINTON — Western Oklahoma Radio Broadcasting Corp., broadcast station.
DURNAT — Democrat Printing Co., FM broadcast station.
NORMAN—State University of Oklahoma, broadcast station.
OKLAHOMA CITY — Byrne Ross, broadcast station.
SHAWNEE—KCFF Broadcasting Co., Inc., vertical antenna.
TULSA — Tulsa Broadcasting Co., FM broadcast station.
TULSA—Public Radio Corp., FM antenna.

SOUTH CAROLINA

ANDERSON—Gluck Mill, Inc., gymnasium.
CLEARWATER—Langley Manufacturing Co., warehouse, addition to existing storehouse.
FLORENCE—Myrtle Beach Broadcasting Co., radio station.
LANCASTER—Lancaster Broadcasting Co., FM broadcast station.
ORANGEBURG — Wannamaker, $55,000, garage.
SPARTANBURG—Noland Co., Inc., office and warehouse.

TENNESSEE

BRISTOL—Radiophone Broadcasting Station, radio station.
CHATTANOOGA — WDEF Broadcasting Co., transmitter and directional antenna.
ELIZABETHTON — American Bemberg Corp., equipment.
HARRIMAN—Harriman Broadcasting Co., Inc., radio station.
KNOXVILLE—Independent Broadcasting Corp., radio station.
KNOXVILLE—Radio Station WBIR, Inc., antenna and ground system and change transmitter location.
KNOXVILLE—East Tennessee Broadcasting Co., standard broadcast station.
KNOXVILLE—Knoxville Sentinel, plant.
McMINNVILLE — McMinnville Broadcasting WMMT, Inc., radio station.
MONSANTO—Monsanto Chemical Co., office and building and addition.
MORRISTOWN — Cherokee Broadcasting Corp., radio station.
NASHVILLE—Rock City Ice Cream Co., alterations and addition, $125,000.
NASHVILLE — Family Service Laundry, Inc., laundry.
PARIS—Broadcasters Associates, radio station.
TULLAHOMA — Tri Cities Broadcasting Co., radio station.

TEXAS

ABILENE—Ed. S. Stewart, warehouse.
AMARILLO — Plains Radio Broadcasting Co., radio station.
AMARILLO—Plains Empire Broadcasting Station, radio station.
ATHENS—Henderson County Broadcasting Co., radio station.
AUSTIN—Thomas G. Harris, Coleman Gay, James P. Alexander, E. G. Kingsbery, Rex D. Kitchens, Spencer J. Scott and Hardy C. Harvey, radio station.
BALLINGER—Runnels County Broadcasting Co., Broadcasting station.
BEAUMONT — Southwestern Greyhound Lines, Inc., shelter.
BISHOP — Missouri Pacific Railroad, modernization passenger and freight depot, installation of safety crossing warning signal.
BONHAM — Fannin County Broadcasting Co., radio station.
BRYAN — Coca Cola Bottling Co., plant, $250,000.
CELINA—Graham Broadcasting Co., radio station.
CORPUS CHRISTI — Fehr Baking Co., plant addition, $32,000.
CORPUS CHRISTI—Red Arrow Freight Lines, Inc., freight depot, $22,000.
DALLAS — Southwestern Bell Telephone Co., exchange addition.
DALLAS—First Texas Chemical Co., $132,600 factory.
DALLAS—H. Tidwell, $29,468, laundry.
DALLAS—Texas Engineering & Manufacturing Co., painting buildings.
DALLAS — Proctor & Gamble, storage

(Continued on page 142)

Above—Work progresses on $6,000,000 Ford Motor Company's assembly plant at Hapeville, Ga.

Below—$1,000,000 Magnavox plant under construction at Paducah, Ky.

The Spotlight is on the OUACHITA AREA

Centrally Located •
Available Resources •
Adequate Transportation •
Satisfied Labor •
Natural Gas •
Steam & Hydro-Electric Power •
Good Climate •
Schools, Churches •
Recreational Advantages •

OUACHITA AREA DEVELOPMENT COUNCIL

WRITE FOR FREE BOOKLET

from the Chamber of Commerce at either
ARKADELPHIA, BENTON, HOT SPRINGS or MALVERN
ARKANSAS

NEW AND EXPANDING PLANTS

(Continued from page 140)

building, $30,000.
DALLAS—T. H. Campbell, warehouse, $20,000.
DALLAS—Jasper Broadcasting Co., broadcast station.
DALLAS—Hess Envelope Co., heater, sink, closet and partitions, $15,000.
DALLAS—E. A. Filter, addition, $14,000.
DALLAS—McFadden & Miller, office and warehouse, $18,000.
DALLAS—Doggett Building, air-conditioning system building, $15,635.
DALLAS—Banda-Page Co., $40,285, warehouse.
DALLAS—Fort Motor Co., remodeling office and plant, $15,000.
DALLAS—Texlite, Inc., plant.
DALLAS—Union Terminal Co., $1,023,088 for alterations, additions.
DALLAS—H. P. Finger, warehouse, $23,400.
DENTON—Ben Ivey Ford Sales & Service Co., auto sales and service building.
EL CAMPO—Wharton County Broadcasting Co., radio station.
EMORY — Farmers Electric Refrigeration Cooperative, locker plant.
FORT WORTH—Stafford-Lowden Printing Co., warehouse and sales building, $35,000.
FORT WORTH—Ryan Motor Co., $90,000,000 building.
FORT WORTH—A. J. Ball, factory, $10,000.
FORT WORTH—Texas Sash & Door Co., warehouse, $200,000.
FORT WORTH—Texas Company, pipeline terminal, $500,000.
GALVESTON—Todd Galveston Dry Docks, Inc., shed, $65,000.
GOOSE CREEK — Tri-Cities Broadcasting Co., radio station.
GOOSE CREEK — White Star Laundry, laundry, $116,000.
GRAHAM — Graham Broadcasting Co., radio station.
GRAND PRAIRIE—Charles L. Cain, broadcast station.
GREENVILLE — Greenville Development Fund, Inc., plant, $140,000.
HARLINGEN — Harbenito Broadcasting Co., Inc., FM radio station.
HENRIETTA—L. E. Dickerson, addition, $20,000.
HOUSTON — Ceco Steel Products Corp., building, $100,000.
HOUSTON — Golden Age Pepsi-Cola Bottling Co., Inc., $162,292 plant.
HOUSTON—Texas Star Broadcasting Co., remote broadcast station.
HOUSTON—Gribble Stamp & Stencil Co., $35,000 plant.
HOUSTON—Houston Lighting and Power Co., plant, $12,500,000.
HOUSTON — Metropolitan Broadcasting Station, radio station.
HOUSTON — Cook Paint & Varnish Co., plant, $150,000.
HOUSTON—Lee Construction Co., plant, $25,000.
HOUSTON—Magnolia Petroleum Co., warehouse.
HOUSTON—American Smelting & Refining Co., addition to plant.
JASPER—Jasper Broadcasting Co., radio station.
LAREDO — Texas-Mexican Railway Co., $105,915 warehouse.
LITTLEFIED—J. C. Rothwell, broadcasting station.
LONGVIEW—R. G. LeTourneau, broadcast station.
LUBBOCK — L. R. Ragland, warehouse, $27,700.
NACOGDOCHES—Nacogdoches Broadcasting Co., broadcast station.
NEW BRAUNFELS — Bock Motor Co., $66,990 building.
PORT ARTHUR—Port City Broadcasting Co., radio station.
SAN ANGELO—Ingham S. Roberts, broadcast station.
SAN ANGELO—San Angelo Tractor & Implement Co., building, $15,000.
SAN ANGELO—San Angelo Broadcasters, broadcast station.
SAN ANTONIO—Harold Schaezler, filling station.
SAN ANTONIO—San Antonio Transit Co., shops and service building, $520,832.
SAN ANTONIO — Brand Engraving Co., building.
SAN ANTONIO — Valcar Enterprise, Inc., buildings.
SAN ANTONIO — L. B. Kelly Co., $23,700, addition to building.
SHERMAN — Denison Broadcast Corp., radio station.
SWEENY—Alamo Refining Co., rehabilitation, refiner,.
TAYLOR—Williamson County Broadcasting Co., radio station.
TAYLOR—Pickoff Dr. Pepper Bottling Co., plant.
TEXAS CITY—Carbide & Carbon Corp., $70,000, addition.
TEXAS CITY — Monsanto Chemical Co., $1,000,000, office and warehouse; $5,000,000, mechanical installations and processing equipment.
TULIA—Swisher Creamery, Inc., $30,000 additional building and equipment.
TYLER — Blackstone Broadcasting Co., broadcast station.
TYLER — Rose Capital Broadcasting Co., radio station.

VIRGINIA

ARLINGTON—Edmonds Motors, Inc., addition, $60,000.
BRISTOL — Appalachian Broadcasting Corp., radio station.
DANVILLE—Virginia-Carolina Broadcasting Corp., radio station.
HARRISONBURG — Shenandoah Valley Broadcasting Corp., radio station.
HARRISONBURG — Rockingham Milling Co., Inc., building.
LYNCHBURG — Old Dominion Broadcast station, radio station.
NEWPORT NEWS — Chesapeake & Ohio Railway, $7,000,000 coal pier.
RICHMOND—Havens & Marin, Inc., television relay broadcast station.
RICHMOND — Carlton C. Cobb, building, $18,000.
RICHMOND—Radio Virginia, Inc., broadcast station.
RICHMOND—Larus & Brother Co., Inc., broadcast station.
ROANOKE — Radio Roanoke, Inc., FM broadcast station.
RICHMOND — Concrete Pipe & Products Co., addition to office.
RICHMOND — Station WRNL, building, $600,000.
SALEM—Kraft Foods Co., dairy pro-office, storage and distribution building, $180,000.
SALEM—Chesapeake & Potomac Telephone Co., building, $153,500.
SUFFOLK—Planters Nut & Chocolate Co., building.
URBANNA — Wise Contracting Co., Inc., plant.
WAYNESBORO—Waynesboro Broadcasting Station, station.
WARWICK COUNTY — Colorplant Corp., building.
WINCHESTER — Winchester Broadcasting Corp., broadcast station.

WEST VIRGINIA

BECKLEY — Chesapeake & Potomac Telephone Co., addition, $120,000.
BECKLEY—Joe L. Smith, Jr., broadcast station.
BLUEFIELD—Norfolk and Western Railways, first section $12,000,000 main line project.
BLUEFIELD — Daily Telegraph Co., FM broadcast station.
ELKINS—West Virginia Radio Corp., antenna, change of transmitter.
GARY—U. S. Coal & Coke, improvements.
GRAFTON—E. S. Hamrie, garage and service station.
HUNTINGTON—Huntington Broadcasting Corp., FM broadcast station.
HUNTINGTON—Standard Ultramarine Co., steam generating facilities, $180,000.
LAREDO—Hugh Yates Petroleum Co., service station, $12,000.
OAK HILL—Robert R. Thomas, Jr., power and installation of transmitter.
PINEVILLE — Wyoming Broadcasting Co., broadcast station.
PRINCETON—Mountain Broadcasting Co., Inc., radio station.
WHEELING — Community Broadcasting Co., Inc., radio station.

Naval Stores Situation

(Continued from page 73)

forests as a source of tax income."

Meantime, as the above cited data emphasize, Alabama has dropped back in naval stores output—though the state's interim accomplishments in reforestation and forest utilization otherwise are far more encouraging.

Georgia, in its top naval stores position among the six Southeastern states, employs up to 25,000 persons in turpentining, says the Georgia Industry Panel. These people work 40,000,000 long-leaf and slash-pine faces annually.

The state has 10,000 producers whose operations range from 500 to 1,000,000 trees. Farmer-type producers, working an average of 2,500 trees, represent 80 per cent of the operators, and 50 per cent of the trees worked. Capital investments range from $20,000 to $250,000 each in Georgia's 23 central gum buying plants.

During the past 16 years, 86,000,000 trees from the state's nurseries have been planted in Georgia and many thousands of other trees from Federal and private nurseries. About 20 years are required for tree growth to the preferred 10-inch diameter.

Trees are planted about 435 to the acre and at age 10 to 15 years are thinned to 175 to 200 better trees per acre. Trees removed provide posts, firewood or pulpwood but are undesirable for lumber. Thinning should give the landowner a net return of $10 to $15 per acre.

Georgia emphasizes that "owners and operators must realize their responsibility in preserving such an important industry."

Florida's Mr. Williams, quoted above, says the same. He explains that the "considerable" decline in naval stores production in the past 10 to 15 years "has been due primarily to the cutting out of all the virgin forests in the Southern long-leaf and slash pine belt.

"But, at the present time, due to the conservation of our timber resources, namely fire protection and proper cutting, the turpentine industry definitely is being set up on a more firm basis. The turpentine operators themselves have been the leaders in the conservation movement."

Valdosta, Ga., now is the turpentine capital of the world and the home of the American Turpentine Farmers Association, organized in 1936. Mainspring through the years in that co-operative endeavor has been Judge Harley Langdale, the world's largest turpentine farmer. His marketing ideas have been credited with averting financial collapse of this industry. This was accomplished by merchandising turpentine in small cans and bottles to the retail trade.

The expressed hope of this Georgia association (a hope shared by the other turpentine states) is that turpentining can be aggrandized into a chemical industry while casting off its outlived naval stores traditions.

America is fully equipped to outdo its wartime production record in the decade 1950-1960, says the *Twentieth Century Fund's* review of "*America's Needs and Resources*." Evans Clark, executive director of the fund, says "our inventive genius, our organizing ability and our skills have given us here in the United States the greatest productivity and the highest standard of living in the world."

Visual Production Planning

A 12-page catalog by Visual Production Planning, Inc., 5102 Butler St., Pittsburgh, 1, Pa., describes a line of wood-working equipment in ¼-inch scale.

The items are: band saws, table saws, jointers, disc and belt sanders, radial arm saws, jig saws, etc.

Seaport CITY *of* INDUSTRIAL *Opportunity*

HELENA *and* WEST HELENA

Arkansas

HISTORICAL . . . strategic Helena, visited by DeSoto in 1541, Marquette and Joliet in 1763, became a river terminal as far back as 1800, when William Patterson built a crude warehouse for storing goods and accommodations for shipping. The Mighty Mississippi has always played an important part in the progress of the city. Mark Twain once wrote: "Helena occupies one of the prettiest locations on the river."

Today, picturesque Helena, with its avenues lined with maples and magnolias, is slated for great expansion of business . . . addition of new industries . . . and construction of more civic facilities.

The latch-string is out to you at Helena-West Helena, for profitable manufacturing, distribution, retail sales . . . and pleasant living!

Facts Worth Investigating

HARDWOOD PRODUCTS . . . AGRICULTURE and LIVE STOCK: Phillips County's rich, alluvial soil grows all kinds of crops. Excellent opportunities for processors of farm products . . . outlets for things farmers need. Six wood products mills already operate in Helena-West Helena.

PUBLIC UTILITIES: Unlimited electrical power, propane gas, capacity, 864,000 cu. ft. daily. 2,679 telephones. Water supply from deep wells, 5,372,000 gallons per day capacity.

POPULATION:
Population, Helena-West Helena 16,500 (estimated 1947).
Trade Area: 6 counties, population, 125,000.

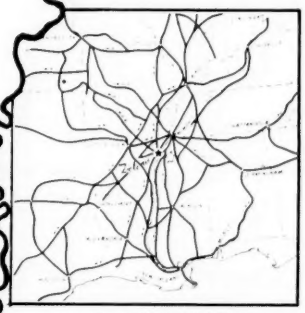
TRANSPORTATION: 3 railroads, 2 motor transport lines, 4 bus lines, city bus service, modern Class 3 airport, 24-hour ferry across Mississippi. Helena harbor and terminal facilities are the best in the lower Mississippi valley, only one on the west bank of the river.

PIPE LINE: Terminus of Project Five Pipe Line Corp., where millions of gallons of fuel oil is transferred to river barges, railroad tank cars and motor transports for distribution.

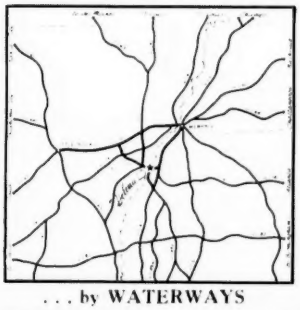
FREIGHT RATES: Lower freight rates than any other station in Arkansas on shipping from points east of Mississippi River. Rates are based on east bank classification.

HELENA-WEST HELENA *is accessible*

. . . by RAIL



. . . by HIGHWAYS



. . . by WATERWAYS

A Center of Culture in the Delta . . . a Town of Old Families . . . Where Hospitality Is a Tradition!

27 Manufacturing Plants;

•

11 Jobbers and Wholesalers;

•

2 Newspapers; 1,000-Watt Radio Station;

•

Excellent Recreational Facilities

PHILLIPS COUNTY CHAMBER *of* COMMERCE

328 CHERRY STREET

H E L E N A, A R K A N S A S

Kanawha Valley Chemical Wealth

(*Continued from page 79*)

some of the older chemicals are being produced to meet the growing demand by industry.

Chemicals for Thousands of Uses

The things that are made by industry with the help of these chemicals can be seen on every hand. Houses, clothes, automobiles, trains, airplanes and medicines for the protection of health, all use chemicals in a thousand ways. The comforts of everyday living, like the telephone, the refrigerator, the radio, motion pictures — all these things and many more, manufactured by America's Industries, depend in some way on the kinds of chemicals made at the South Charleston plant.

If you are a sufferer from hay fever or asthma, you may be treated with "Benadryl" or "Pyribenzamine." Both these medicines are made with the help of a chemical known as dimethylethanolamine, which is made at the South Charleston plant. Or, if you have a sinus infection and are treated with penicillin, the chances are that the penicillin was extracted from the mold in which it grows by a chemical made at this plant.

Another wonder drug, streptomycin, and the sulfa drugs, and many of the vitamins — things that help keep you healthy or cure infections and diseases when you become ill— are made with the aid of Carbide chemicals. Even for sore muscles, the rubbing alcohol, isopropanol, is made at the plant.

Take a look at the clean, brown flakes in the end of a cigarette. Between the time the tobacco was out in the fields and the leaves were sliced into flakes there had to be a long period of mellowing storage. The leaves were stacked high in warm, dark, heavy-odored warehouses—just the place to invite all sorts of insects and molds. That is why cigarette manufacturers are careful to use a fumigant that protects the tobacco from all these unclean attacks and still does not affect its delicate flavor. And that fumigant—ethylene oxide—is made at the plant on Blaine Island.

The vanilla extract in your kitchen is made with an alcohol called propylene glycol. This same alcohol, and another chemical, triethanolamine, are the ingredients that make vanishing cream smooth. Your dresses and your shirt collars will soon be made shrinkproof with glyoxal by the new "Sanforset" process. All these are chemicals made by Carbide at South Charleston.

With three other Carbide chemicals, consumers have more direct contact. They are "Prestone" antifreeze, "6-12" insect repellent, and "Pyrofax" gas, so important for cooking and heating wherever city gas is not available.

But not all of the chemicals are liquids or gases. Many of the new handbags, shoes, shower curtains, aprons, raincoats, and other such colorful merchandise sold in the stores all over the country are made of "Vinylite" plastic. This plastic starts as a soft, white powder from the South Charleston plant, where it is produced from petroleum gas and chlorine. The powder, or "Vinylite" resin, is then shipped to another plant where it is heated and mixed with other chemicals and coloring materials until it becomes a colored plastic dough. While still hot, this dough is placed between large steel rolls that squeeze it into the form of sheeting. And depending on the chemicals added, the sheeting may be relatively rigid or rubber-like.

There are hundreds of different uses for "Vinylite" plastics, in addition to its more familiar uses such as aprons and shower curtains. One form of it, for instance, is placed as a thin sheet between two pieces of glass—and this is the safety glass that is used in cars, buses, and trains. It is also used as electrical insulation for cables, especially on shipboard.

In the chemist's eyes, the Vinyon yarn which will be produced at Carbide's new development laboratory in South Charleston is closely allied to "Vinylite" plastics. This yarn will be used especially for tests by the manufacturers of such things as industrial fabrics, fishing lines, upholstery fabrics, ropes, raincoats, waterproof sports clothing, and dress goods. Hosiery made from the yarn, which is surprisingly similar to silk, is still in the experimental stage, but tests made over a long period of time indicate great promise in this field.

There is virtually no limit to the variety of chemicals that can and will be produced by Carbide, because of their knowledge of the molecules in the petroleum gas and how to rearrange them in so many ways into new chemicals.

This is why the company is devoting so much time to research, to discover still newer molecular rearrangements and combinations, still newer chemical processes for producing known chemicals, and new uses for industry to make of the chemicals.

This is why the new yarn laboratory, and the new central laboratory are being built. And as the discoveries reach the production stage, existing production units will be converted or new units will be built in an expanding plant.

There will be more jobs for more people. A new office building is also about to be constructed, while the former office building will be converted for improved medical facilities for employees, enlarged personnel offices, and industrial relations work.

Carbide will continue to build up the wealth of South Charleston, Charleston and the Kanawha Valley.

Air Express Anniversary

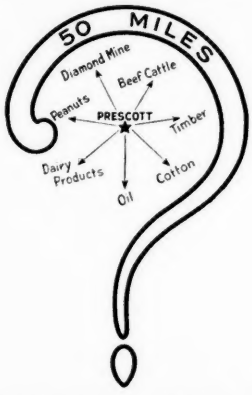
Air express, the pioneer air shipping service in the United States, will observe its 20th anniversary on September 1. Organized air express had its beginning on September 1, 1927, when four airlines joined with the American Railway Express company—predecessor company of R.E.A.—to establish a nationwide air shipping service, with routes extending from Boston and New York to San Francisco and Dallas, Texas. Today the domestic service is operated over a 70,000-mile network of 25 certificated airlines with routes extending to the four corners of the U. S. and Canada. International air express connections extend the service to the principal cities on six continents.

Solderless Wiring Devices

Compiled for design and production engineers, Aircraft-Marine Products, Inc., announces selection data book on their entire line of solderless wiring devices. This plastic-bound volume displays the various types of solderless terminals, their features and their applications in a series of illustrated charts, index-tabbed for reference.

A copy of this data book may be obtained by writing to Aircraft-Marine Products, Inc., 1571 North 4th Street, Harrisburg, Pa.

There is NO QUESTION
ABOUT NATURAL RESOURCES
IN
PRESCOTT, ARKANSAS



PLANT SITES AVAILABLE
IN

PRESCOTT
ARKANSAS

COUNTY SEAT OF NEVADA COUNTY

●

LOCATION—Southwestern section of the State of Arkansas. The City of Prescott is the County seat.

POPULATION—The population of Prescott is approximately 5,000.

NATURAL RESOURCES—Timber, oil, asphalt, clay and various minerals are essentially part of Nevada County industrial wealth. Extensive timber growth provides both soft and hardwood for plant operation in lumber, cooperage, veneer, pulp wood and furniture production. Nevada County oil producing wells are increasing in number and form one of the basic industries of this area.

AGRICULTURE—Well balanced development of agriculture including beef cattle, dairy and poultry products, cotton, corn, peanuts, fruit and vegetables.

TRANSPORTATION—Main line of the Missouri Pacific Railway. Eastern terminus Prescott & Northwestern Railway. On transcontinental highway No. 67.

LABOR—Ample supply of skilled and unskilled labor, both male and female, 99% native born.

POWER—Unlimited supply of electricity and natural gas available. Rates comparable to the lowest in this area.

PRESCOTT offers every reasonable inducement to prospective industries especially those interested in processing wood, clays and vegetable products.

FOR FURTHER INFORMATION ADDRESS

PRESCOTT CHAMBER OF COMMERCE
PRESCOTT, ARKANSAS

RUSSELLVILLE,
ARKANSAS

Invites Industry to Consider These Facts

An abundance of loyal labor available—City population 8,000—35,000 within 20 mile radius—96% native white

Fine transportation on the main line of the Missouri Pacific Railroad—Central Division between Little Rock, Arkansas, and Kansas City, Missouri—U. S. Highway #64 and State Highways #7 and #27—Airport

Plenty of natural gas and high quality anthracite coal, lumber, agricultural products, livestock, dairying, fruit and vegetables

Living conditions conducive to a happy labor supply. Good schools including an accredited junior college. Recreational facilities, fishing, hunting, swimming, golf, Ozark and Ouachita National Forests recreational areas available

International Shoe Company recently selected Russellville as the location for one of their branch plants

You should investigate Russellville concerning your expansion needs

For information wire or write

RUSSELLVILLE
CHAMBER OF COMMERCE
Russellville, Arkansas

Southerners at Work

Delta Directors

Delta Air Lines has announced election of four new directors in an enlargement of the board of directors in connection with a general expansion of the company. The new directors elected are: R. W. Freeman of New Orleans, Edward H. Gerry of New York City, Winship Nunnally of Atlanta, Richard J. Reynolds of Winston-Salem, N. C. and Miami Beach.

Other directors are: C. E. Faulk, chairman; C. E. Woolman, president and general manager; Laigh C. Parker, vice-president of traffic; M. S. Biedenharn, vice-president; Travis Oliver, treasurer; C. H. McHenry, secretary; L. B. Judd, comptroller; and D. Y. Smith.

Woolman, announcing the election, said the new directors were added because of a general expansion of the company, with further extensions in sight.

Mr. Freeman, a native of New Orleans, is president and director of the Louisiana Coca-Cola Bottling Co., Ltd. He is a graduate of Tulane University and prominent in New Orleans civic affairs, now serving as state treasurer and director of The American Cancer Society, and director of the New Orleans Summer "Pops" Concerts, Inc.

Edwards Appointed by I.R.I.

Oliver G. Edwards, formerly director of research for the Avondale Mills, Sylacauga, Alabama, has accepted an appointment to the staff of the Industrial Research Institute of the University of Chattanooga where he will investigate problems for the textile industry.

During the past twelve months, Mr. Edwards was in Germany as a member of the Quadripartite Commission on Textiles, which set the industrial level for postwar Germany.

Industrial Director

Miles L. Austin of St. Louis, former industrial commissioner, has been appointed director of industrial development for the St. Louis-San Francisco Railway (Frisco), it is announced by T. H. Banister, assistant vice president.

Austin's headquarters will be in St. Louis, and he will assume the duties formerly held by Mr. Banister before his promotion to an assistant vice presidency of the Frisco.

Mr. Austin has been with the Frisco since 1912, starting as a stenographer and moving through the ranks to the post of industrial commissioner. For the past several years he has directed much of the Frisco's activity toward locating new industries in its territory.

Railroad Promotes Four

A number of appointments are reported by The Virginian Railway Co., Norfolk, Va. L. R. Early is now general agent, Atlanta, Ga., with offices at 101 Marietta Street Bldg., succeeding J. W. Tumlin, resigned; Robert W. Phillips is general agent, Washington, D. C., with office at 1117 Woodward Building, succeeding Mr. Early; W. A. Williford is Chicago commercial agent, succeeding Mr. Phillips; and H. Allen Burroughs succeeds Mr. Williford as traveling freight agent.

Heads Foreign Trade Group

Former Governor Hugh L. White, who proposed formation of a permanent Mississippi Import-Export Committee at a conference in Jackson in April, has been elected by the Board as chairman of the committee. Members of the executive committee, to include seven representatives from river and coast cities and port commissions, will be named by Mr. White in the near future. Formation of plans for the committee will be developed at a forthcoming organization meeting. The committee will help develop new markets and promote foreign trade. Former Governor White's post as chairman of the Board's industrial committee will be filled by Governor Fielding L. Wright, chairman.

B. & O. Director

Arthur W. Steudel, president of the Sherwin-Williams Company of Cleveland, has been elected a member of the board of directors of the Baltimore and Ohio Railroad, according to an announcement made by Roy B. White, B. & O. president. He succeeds Crispin Oglebay, shop and mine owner, also of Cleveland, who resigned from the board recently.

His election continues the policy of the Baltimore and Ohio to invite business men of the principal cities served by the railroad to serve on its board.

Greece Aid Coordinator

The Secretary of State recently announced the appointment of George C. McGhee, formerly of Dallas, Texas, as Coordinator of Aid to Greece and Turkey.

Mr. McGhee, Special Assistant to William L. Clayton, Under Secretary for Economic Affairs, already has coordinated the initial formulation of plans and personnel for the Greek and Turkish missions both in the Department and as the deputy chairman of an inter-departmental committee.

He was formerly a partner in the consulting geologist firm of DeGolyer, MacNaughton and McGhee, Dallas, Texas; and vice-president of the National Geophysical Company of Dallas.

A graduate of the University of Oklahoma, he completed his geology and geophysical studies at Oxford as a Rhodes Scholar and at the University of London.

Two Join Institute Staff

Dr. William H. Horne has joined the staff of the Institute of Textile Technology, Charlottesville, Va., to work in the Division of Organic Chemistry. He comes to the Institute after 14 years with the Kenwood Mills of F. C. Huyck and Sons, where he was in charge of the laboratory and engaged in research on the chemistry of wool and wool processing.

Dr. Horne was born in Berlin, Germany, where his parents were visiting for a year. He grew up in Leonia, New Jersey.

Dr. Monroe Couper, a native of Norfolk, Virginia, also has joined the staff, in the Division of Organic Chemistry. He attended Principia (Mssouri) College and the University of Virginia, receiving from the latter institution the degrees of B. S. in Chemistry, M. S., and Ph. D. (1939).

After three years as instructor in general chemistry at the University of Virginia, Dr. Couper was with the DuPont Company for 6 years as research chemist where he was engaged in dye research problems, in particular the synthesis, application and fastness of dyes.

Revenue Commissioner

Effective June 7, 1947, Azro Hadley, former member of the Kentucky Tax Commission, was appointed Commissioner of Revenue by Governor Willis to succeed O. M. Howard, Commissioner of Revenue since March 20, 1945.

FPC Official

Election of Harrington Wimberly of Oklahoma as vice-chairman of the Federal Power Commission, succeeding Richard Sachse of California, is announced by the FPC.

Mr. Sachse recently resigned from the Commission because of ill health.

Mr. Wimberly was appointed to the FPC in October 1945 for a term expiring June 22, 1948. He succeeded Basil Manly who resigned to enter private business.

Owner and publisher of the Altus (Oklahoma) *Daily Times-Democrat*, Mr. Wimberly has served as a director of the Southern Newspaper Publishers Association and of the Oklahoma Press Association, of which he was president in 1937 and 1938.

He is a graduate of the University of Oklahoma and has served as a member and president of its Board of Regents.

Monsanto Promotions

Appointment of Dr. R. M. Hitchens as research director of the Monsanto Chemical Company's Organic Chemicals Division, St. Louis, Mo., was announced by Osborne Bezanson, vice president and division general manager. Dr. Hitchens, who has served as associate director since 1944, succeeds Dr. Lucas P. Kyrides, who recently resigned. Concurrently it was announced that Dr. O. J. Weinkauff, assistant director, was promoted to associate director, and that Dr. F. B. Zienty and Dr. L. L. Fellinger, group leaders, were promoted to assistant directors.

Texas Engineer Retires

The U. S. Geological Survey has announced the retirement of Walter N. White, district engineer in charge of ground-water investigations in Texas. Mr. White has served the Geological Survey for a period of 36 years in investigations related to water and its utilization in many parts of the country, and has been in charge of the work in Texas in cooperation with the State Board of Water Engineers since 1929. To succeed Mr. White the Geological Survey has appointed William L. Broadhurst, with the title of district geologist.

Under Mr. White's direction, a small organization has attracted widespread recognition because of its research in ground-water problems and, as a result,

(*Continued on page* 150)

Why Look Further?

In this age of decentralization You, as manufacturers, are searching for the best possible location for your plant...Your search should end in...

SPRINGDALE, ARKANSAS

HERE ARE THE FACTS YOU WANT TO KNOW

1. LOCATION: On the Ozark Plateau in Northwest Arkansas.
2. POPULATION: Present estimate 5,000—an increase of over 50% since 1940.
3. TRANSPORTATION: U. S. Highways 71 & 62, State Highway 68, Frisco Railroad, Airport. Home office and terminal of one of South's largest truck lines.
4. UTILITIES: Electric power, natural gas, water. All at reasonable rates. One of the most modern sewage disposal plants in the Southwest with ample capacity to care for most industrial waste.
5. BANKING and COMMERCIAL: Two banks, with deposits exceeding $8,000,000. Agricultural products sold through Springdale wholesale markets in 1946 for a total of $11,649,000.
6. LABOR SUPPLY: Ample supply of home owning, contented, workers. No labor-management strife.
7. CHURCHES: Most all leading denominations.
8. SCHOOLS: Two grade schools, Junior high school, fully accredited senior high school. University of Arkansas 8 miles away.
9. CIVIC ORGANIZATIONS: Chamber of Commerce, Woman's Civic Club, Rotary, Kiwanis and Lions Clubs, Business and Professional Woman's Club.
10. RECREATION: Grass greens golf course, two theatres, two lighted athletic fields, hunting, fishing, annual Rodeo of the Ozarks, riding club.

INDUSTRIES ADAPTABLE TO SPRINGDALE, ARKANSAS

- FOOD PROCESSING
- GARMENT MANUFACTURING
- FURNITURE & NOVELTY MANUFACTURING
- POULTRY EQUIPMENT MANUFACTURING
- PLASTIC & METAL FABRICATION
- BEVERAGE BOTTLING

XUM

Southerners at Work

(Continued from page 146)

there has been a growing realization of the fundamental and economic importance of these studies to industries and municipalities. During the "defense" days and the war years that followed Mr. White met the demands of war industries and military establishments for adequate water supplies with a soldierly performance of duty. Although he has now been retired by the Geological Survey, his services are still retained by the State Board of Water Engineers for special assignments and he will continue to live in Austin.

Research Director

Richard D. Dunlop, associate director of research at the Monsanto Chemical Company's Plastics Division at Springfield, Mass., has been named technical director in charge of research and development of the company's Texas Division, with headquarters at Texas City, effective September 1, it was announced by Joseph R. Mares, General Manager of the Texas Division.

Mr. Dunlop, who received a B.S. degree in chemical engineering from Washington University, St. Louis, in 1931 and an M.S. degree in 1933, joined Monsanto in 1927 as a laboratory analyst. In 1933 he became a chemist at the John F. Queeny plant at St. Louis, and in 1938 he became production superintendent of the subsidiary Shawinigan Resins Corporation at Springfield.

Sales Manager

R. G. Bellezza, president of Locke Insulator Corp., Baltimore, Md., announces the appointment of William H. Zillger as Sales Manager of the Distribution Materials Division. Mr. Zillger replaces Mr. S. P. Brady who has resigned.

Mr. Zillger was graduated from Purdue University in 1937, and is a member of A.I.E.E., and an associate member of the I.E.S. He is also a member of Lambda Chi Alpha Fraternity.

Branch Manager

Carroll M. Baumgardner, executive vice president of the United States Radiator Corporation, Detroit, Mich., has announced the appointment of Hanley H. Smith as branch manager for the Corporation and its Pacific Steel Boiler Division at Washington, D. C. Mr. Smith, formerly government representative for the Corporation, succeeds F. F. Burke, resigned.

To Direct Manufacturing

Charles E. Colvin has been appointed manager of the production planning section in the Baton Rouge, La. manufacturing plant of Ethyl Corporation, John H. Schaefer, vice president in charge of manufacturing has announced. Mr. Colvin succeeds B. E. Perkins, Jr., who has resigned to enter private business.

Mr. Colvin, who has been associated with Ethyl for the last 16 years, began as a field representative in the Chicago sales office. Since 1937, he has been a special assistant to Mr. Schaefer. He also served as manager of Ethyl's technical division in Baton Rouge in 1941.

A native of Knoxville, Tennessee, Mr. Colvin received a B.S. in mechanical engineering from the University of Kentucky.

FRS Director

The Board of Governors of the Federal Reserve System has announced the appointment of Edward R. Stettinius, Jr., of Rapidan, Va., as a Class C Director of the Federal Reserve Bank of Richmond for the unexpired portion of the term ending December 31, 1949. Mr. Stettinius is Rector of the University of Virginia.

Sales Manager

L. E. Bartlett, formerly connected with the Chicago Sales Office of the American Lumber and Treating Company, has joined T. R. Miller Mill Company with headquarters at Brewton, Alabama, Mr. John R. Miller, Company Vice President, has announced.

A program of expansion which will practically double the present capacity of the Miller treating facilities is now in progress. The Company is also building facilities for pressure treatment with Du-Pont Chromated Zinc Chloride.

In his new position Bartlett will be engaged in the capacity of Sales Manager for the Treating Department. Materials will be distributed throughout all states East of the Rockies.

Merchandising Chief

Eldon E. Libby, career sales executive has joined the Southern States Iron Roofing Company, of Savannah, as merchandising manager. The appointment was announced by Frank O. Wahlstrom, president of Southern States.

Mr. Libby comes to Southern States from W. H. Schatz Industries, Inc., of Chicago, where he was vice-president in charge of sales and promotion. The Schatz firm is national sales representative for 17 manufacturers of hard line merchandise.

The new merchandising manager brings to Southern States a wealth of experience gained over almost a quarter of a century of association with major mail order firms and in his own business.

Traffic Manager

Everett G. Baker of St. Louis, who started with the railroad as a ticket clerk, has been appointed general passenger traffic manager of the St. Louis-San Francisco Railway Company (Frisco) it is announced.

Mr. Baker joined the Frisco in 1914 in the dual job of ticket clerk and passenger agent in St. Louis. In 1934 he was named assistant general passenger agent in St. Louis. Three years later he was appointed general passenger agent, and in the latter part of 1944 was named passenger traffic manager, a position he held until his present promotion.

Frisco Promotes Four

Promotion of four St. Louisans in the traffic department of the St. Louis-San Francisco Railway (Frisco) was announced by James E. Payne, vice president.

Those promoted are:

Herbert V. Cook from assistant general freight agent to general freight agent in charge of commerce.

C. H. Wakefield, C. G. Stemmler, and C. A. Pratte, all from executive clerk to assistant general freight agent, rates.

Mr. Cook has been with the Frisco since 1920, beginning as a clerk. He has been admitted to practice before the bar of the Interstate Commerce Commission and during the past few years has been handling commerce matters for the Frisco.

Named by S.A.S.I.

CHARLESTON, S. C.—D. C. W. Ward, Jr., of Baltimore, Vice-President of the Union Trust Company of Maryland, has been named to the board of trustees of the Southern Association of Science and Industry from the State of Maryland, it was announced today by Homer M. Pace, of Charleston, President of SASI.

The Association recently inaugurated southwide programs for education, forestry and agriculture and has set September 1 as deadline to begin publication of "an inventory of southern resources," a series of monographs which outlines the natural and human resources and the research facilities of the region.

"Mr. Ward's untiring effort during the past year as Chairman of the SASI membership committee for Maryland and his record of service in the civic affairs of Baltimore well qualify him for the board of trustees of this organization," Mr. Pace said in recommending his appointment to the executive committee, which met July 23 in Richmond. Besides his work for SASI, Mr. Ward has served on various committees of the Baltimore Association of Commerce.

"SASI activity in Maryland has been strong in the light of the relatively small membership," Mr. Pace continued, and he pointed to Mr. E. Emmet Reid's work throughout the entire South in stimulating scientific research on Southern problems. It is now one of the aims of SASI to increase the numerical support of Maryland to equal that of other southern states.

Sayre Named Manager

Clifford M. Sayre has been appointed general works manager of the Sturtevant division of Westinghouse Electric Corp., where Mr. Sayre will direct manufacturing operations at the division's plants at Hyde Park, Mass., Camden, N. J., La Salle, Ill., and Berkeley, Calif.

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HOUSING FACILITIES!
LARGE LABOR SUPPLY!

No delay getting into production. No gambling on construction costs.

Three large buildings ready for occupancy with almost unlimited flexibility in size. Total floor space available 88,000 square feet. Railroad siding, paved streets, all utilities available. Located at Stuttgart Army Air Field just six miles from business center, on paved highway State 11.

EXCEPTIONALLY LOW RENT FOR RIGHT INDUSTRIES!

The City of Stuttgart has taken over the U. S. Army Air Field with 2,300 acres of land. This includes two tremendous warehouses divided into four sections each, separated by brick fire walls, as well as the machine shop, equipped with fluorescent lights, boilers and toilet facilities.

Housing facilities for workers are available at very low rental and many of these are already occupied.

STUTTGART IS RICE CAPITAL OF ARKANSAS

The Grand Prairie of Arkansas is an area of about 75 miles in length and 45 miles in width, with Stuttgart as its metropolis. Here the rich soil, and fine climate and long growing seasons, with unlimited water supply, it is possible to raise a wide variety of agricultural products aside from rice. Oats, lespedeza, soybeans, corn, hay and other field crops thrive. Dairy and beef cattle, hogs and poultry rank as high as any section of the state.

The large markets of St. Louis (400 miles distant), Dallas (400 miles distant), Memphis (125 miles distant), and Little Rock (50 miles distant), are reached by Cotton Belt and Rock Island Railroads as well as numerous truck lines.

Stuttgart, with approximately 10,000 population, and located on plateau above flood stage of all waterways, is one of the best developed cities in the Southwest. Fine stores, schools, churches, and one of the state's best hotels, reflect the progressive spirit of the citizens.

STUTTGART is a paradise for the sportsman. Hunting and fishing are at their best here. The rice fields bring millions upon millions of ducks and geese here. The National Annual Duck Calling Contest is one of the unique features.

In the many lakes and rivers surrounding the city excellent fishing can be enjoyed. Bass, crappie, and catfish predominate with gars weighing as much as 200 pounds.

The importance of the Stuttgart area agriculturally is evidenced by the fact that the University of Arkansas operates a rice branch experiment station here, on a 486-acre farm.

Investigate the advantages of Stuttgart and come, inspect these buildings at once.

A genuine welcome awaits you! Please address communications to:

H. C. STUMP, *Secretary*

STUTTGART CHAMBER OF COMMERCE

STUTTGART, ARKANSAS

XUM

New Container Plant

Completion of a new plant for the manufacture of the Watkins container by the Dillman Industries, Inc., 1639 Highland Road, Memphis, Tenn., directs attention to a container made of Kraft corrugated board with the wood parts glued to the corrugated. It is claimed that this provides a smooth surface inside the container next to the article being shipped. Each container is designed and engineered for the particular article it is to carry, such as stoves and ranges, electric refrigerators and freezer cabinets, hot water heaters, washing machines, etc. The company was started in 1907 to make egg cases. At this time other lines have been discontinued and production is entirely devoted to the three-piece, corrugated wood-cleated containers.

All-Purpose Varnish

Developed during the war at the research laboratories of Devoe & Reynolds at Louisville, Ky., the company's new 87 Spar Varnish is reported now as being sold and distributed by various subsidiary companies, including Peaslee-Gaulbert Paint & Varnish Co., Louisville. The product is said to be accident-proof as, for instance, against dousing with hot tea, soapy water, alcohol and fruit acids. It is suggested for floors, furniture and woodwork.

Steel Tubes

A special line of alloy and stainless steel tubes, produced by what is known as the centrifugal process, is a development of American Cast Iron Pipe Co., Birmingham 2, Ala. The development is an outgrowth of experiments conducted during the war to enable obtainment of greater variety of metal products. It is explained by J. W. Moore and J. W. McKay, officials of American Cast Iron Pipe, in a paper presented at the recent semi-annual meeting of American Mechanical Engineers, that the process requires a high heat resistant sand and special orifice pouring devices.

Porous Piston Ring

Porous Chrome piston rings developed by Koppers Co., Inc., of Baltimore, Md., during the war are reported by the company now to be available for peacetime use. In operation the function of the ring is as follows: when first placed in the cylinder the pores in the surface of the ring collect and hold lubricating oil. As the porosity begins to wear off, which takes only a few minutes, the millions of tiny particles mix with the oil to form a very fine polishing compound, and as the ring moves up and down in the cylinder, it acts as a very gentle hone, polishing the cylinder and causing the rings to seat in almost immediately. Reduction in blowby reduces wear during break-in to a fraction of that ordinarily experienced. Possibility of scuffing is also reduced.

Concrete Sealer

A recent notable development by a Southern manufacturer has been achieved by the Southport Paint Co., Inc., of Savannah, Ga., in its "Southport Pigmented Semi - Transparent Sealer for Concrete". This sealer is designed to keep the moisture out, but at the same time permits breathing sufficient to allow escape of moisture contained in exposed concrete. This material as a primer and sealer must eventually be protected from the elements, and for this purpose a white or tinted protective coat is provided. These two materials offer to both the large and small user an economical, durable finish that is both protective and decorative for all concrete, and cast stone building as well as the larger jobs such as concrete bridges, retaining walls, and tunnels.

Furnace Black

A new carbon black, of the furnace black variety, is announced by United Carbon Co., Inc., Charleston 27, W. Va. This product, pelleted and dustless, and resolved from incomplete combustion of oil enriched natural gas by the furnace process is recommended for the reinforcement of natural rubber, and for GR-S synthetic rubber in all kinds of tire treads, also in soles, heels, belting and cable. Further uses are in printing and engraving inks. In both natural and GR-S rubber the black is represented to be characterized by low accelerator requirement, hot mixing, easy processing, fast extrusion, low shrinkage, fast rate of cure, very high modulus, high tensile, high resiliency, moderate heat generation, and high resistance to abrasion, cutgrowth and flexing. Particle configuration indicates reticular structure with compact clusters and multiple branching.

Above—Hand-made spray boom designed by Dow technicians for applying 2, 4-D or other weed killers along roadsides.

Maple Furniture

A new line of furniture put on the market by Louisville Chair & Furniture Co., 11th & Magnolia Sts., Louisville, Ky., is entirely of solid maple construction, with dustproof shelves in the wall pieces and guides on the drawers. Included in the line: Buffet, top size 18-inch by 46-inch; dinette table and chairs, table size 30-inch by 48-inch by 40-inch; china cabinet, width 34-inch, depth 14-inch, height 70-inch; refectory table and chairs, table size 32-inch by 44-inch, by 60-inch or 34-inch by 56-inch by 66-inch; corner cabinet, height 63-inch, width 28-inch.

High-Pressure Flushing Nozzle

A new type radiator flushing nozzle developed by Homestead Valve Manufacturing Company, Coraopolis, Pa., is intended for use with High Pressure Jenny Steam Cleaners now in service.

The flushing nozzle fits all sizes of radiator hose and affords a positive hose seal without the use of clamps.

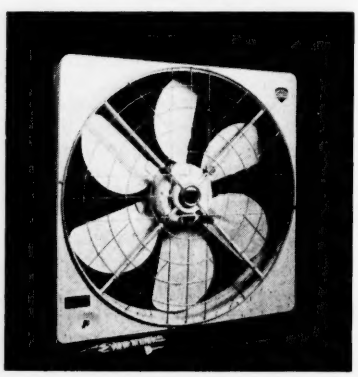
Electric Appliances

Frigidaire Division of General Motors is introducing a new line of home laundry equipment to the public, according to H. M. Kelley, the Company's Appliance Sales Manager. The new line includes a revolutionary new automatic electric clothes washer, which has been in the process of development for nearly 10 years, together with an automatic electric dryer and electric ironer.

Window Fan

A silently running window fan, announced by Bar-Brook Manufacturing Co., Inc., 1553 Texas Ave., Shreveport, La., is so designed that the raising or lowering of the window is not impaired in any way. Being only five and one-quarter inches thick, the fan extends into the room only slightly and can be installed in three minutes by one person using only a screwdriver. Die stamped louvers resembling venetian blinds act as a safety guard, and are so designed as to enhance the appearance of the appliance. The unit is built around a specially designed fan motor which includes one-piece rotor, forward housing construction, and built in thermal overload control. Forward housing serves as hub for the fan blade, eliminating belt or pulley drive. In addition to noiselessness there is no radio disturbance set up by the motor. The fan uses 200 watts, and is provided with 11 feet of white cord with plug. It is recommended for use in homes, offices, shops, apartment houses, and schoolrooms. The appliance is designated Bar-Brook Windo-Wind.

Bar-Brook Window Fan.



Motor Controllers

The new Furnas "A" series 1 h.p. controllers designed for medium industrial or work shop equipment is available in four switching arrangements: reversing, two-speed, series-parallel and 3 pole OFF-ON. This recently announced series has plastic case, handle and contact rotor. An outstanding feature is its versatility of mounting. Several mounting arrangements are available such as an angle bracket, flange mounting plates and plates for attachment to several styles of standard outlet boxes. Rated: 1 H.P. single and 3 phase 110 to 55 v AC; ½ H.P. 115 to 230 v DC. Non inductive loads: 10 amps 110 v AC, 5 amps 220 v AC. Priced at $3.00 with molded plastic handle, $2.75 with steel safety type handle. Bulletin 4702 sent on request. Write Furnas Electric Co., 427 McKee St., Batavia, Ill.

Railroad Bearings

Three new anti-friction bearing developments, for railroads and rail transit operators in new equipment were recently announced by SKF Industries, Inc., Philadelphia, Pa. A new roller bearing journal box can be used on existing passenger cars and other rolling stock; a spherical roller bearing unit for freight car journals and an all-welded steel journal box for installation on the first 100 new subway cars for the IRT division of New York's subway system.

The all-welded steel journal box, developed jointly by SKF and the Welded Products Division of American Car & Foundry, and approved by the New York Board of Transportation, had its first public display at the recent convention of the Railway Supply Manufacturers Association, Atlantic City, N. J. Representing a saving of 400 pounds or more in unsprung weight per car, the box houses a double-row spherical roller bearing.

Portable Water Carrier

The Dixie Cup Company, Easton, Pa., has placed on the market its new Dixie Portable Water Carrier, designed for use on construction jobs, by survey crews, by railroad maintenance crews, and for emergency use such as at fires, also in large manufacturing plants, steel mills, lumber yards, mines, or wherever drinking water is not readily available.

The Dixie Portable Water Carrier is made of stainless steel and is well-insulated to keep water cool for many hours in the field. It has a recessed faucet which turns off automatically when released. A lug is provided for a single or double unit Vortex Paper Cup dispenser. The double unit dispenser has a receptacle for used cups. The carrier is finished in olive green with chrome trim. The capacity is approximately 4 gallons; size 18" high, 15" long, 8" wide. Two adjustable carrying straps are provided.

Each drink is served in an individual cup.

Grinding Coolant

The Bee Chemical Co., 63 East Lake St., Chicago, Ill., has developed a grinding coolant which has been named WHEELYFE 85. WHEELYFE 85 is a clear solution designed to not load the wheel even with the finest grit sizes. Because of freedom from loading, the finish is determined by the grit size used and is not the mirror finish obtained by the buffing action of a loaded wheel. This coolant is claimed to sink chips well, give proper corrosion protection, and not become rancid. The recommended dilution for best results is 1 gallon of WHEELYFE 85 to 30 gallons of water.

Scuff-Proof Plastic

Retail store owners saw a scuff-proof plastic, devised for upholstery, at the Store Modernization Show, Grand Central Palace, New York City. The material, Blanchardized Vinylite, was exhibited in the booth of United States Plywood Corp., 55 W. 44th St., New York 18.

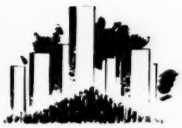
Vinylite is said to be not affected by most solvents, mild acids and alkalis, and to resist heat up to 180 degrees. One of several materials exhibited, Vinylite is produced and decorated by the Blanchard Deco Plastics, Inc., of New Jersey, and is distributed by United States Plywood Corporation.

United States Plywood Corporation announced at the Store Modernization Show that its architectural department is available to anyone for free advice in the proper utilization of its materials.

Plexiglas Powder

Announcement of the new heat-resistant acrylic injection molding powder Plexiglas V, is made by the Rhom & Haas Company, Philadelphia, Pa. Plexiglas V is recommended for high heat resistance, moldability and water-white clarity. It possesses the same notable

(Continued on page 154)



MARKETS

The nation's fastest growing market can be served quickly and efficiently

TRANSPORTATION

A proposed river port, 10 trunk rail lines, 4 airlines, and 7 major highways to serve you

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Cotton, timber, livestock, soybeans, rice, minerals await development

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Skilled, semi-skilled, and common labor may be found at prevailing wage rates.

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Unlimited electric power at rates among the lowest in the nation, plus plenty of pure artesian water are available for your use.

Looking South? Then consider West Memphis, Arkansas—at the crossroads of the fastest growing area in the nation. In West Memphis, just 15 minutes from downtown Memphis, Tennessee, you'll find thousands of acres of excellent low-priced industrial sites, situated to serve the nation's newest and best market by rail, river, truck or air. A proposed river-rail terminal will give West Memphis the only adequate west bank river port between St. Louis and Helena, an advantage you can't overlook. Plenty of raw materials — cotton, rice, soybeans, livestock, timber, minerals — close at hand offer industry excellent opportunities. If you desire big city advantages, yet with room to expand, let us tell you more about West Memphis, Arkansas.

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West Memphis Chamber of Commerce
West Memphis, Arkansas

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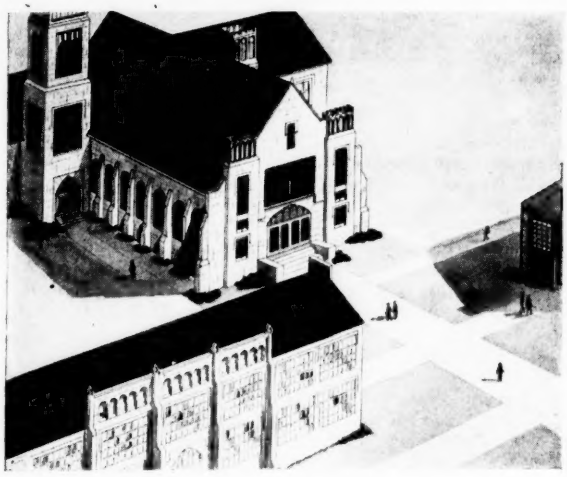

JOHN BROWN UNIVERSITY

announces a

$500,000 BUILDING PROGRAM

The first unit of the new building program at John Brown University is now under construction . . . the Cathedral of the Ozarks, sketched above. This building, along with the new Library and Administration building, will comprise the Memorial Group at the University.

These additions to the campus will fill an ever growing need for greater facilities at this modern, progressive school. Your help is needed now. *This is a work of faith and depends on gifts from Christian friends who feel led to help in the ministry of Christian Education.*

Here is your opportunity to invest in a living memorial . . . your chance to help hundreds of young men and women get an education in surroundings of real Christian fellowship. Send in your contribution today.

ADDRESS DR. JOHN E. BROWN, PRESIDENT

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STRONG PROGRAM FOR THE REHABILITATION OF VETERANS

Lawrence A. Davis, *President*

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A unique, four-year Liberal Arts college which tries to live up to its obligations and responsibilities in a world confused by theories and "isms." Our emphasis is on development of Christian character, and on the training of the type of leadership to which the greatness of America may be entrusted.

George S. Benson
President

Childersburg Newsprint Mill Advances Toward Construction

Kimberly-Clark to Manage

Probably no single recent event in Southern industrial history has elicited more widespread interest than culmination of plans for a giant newsprint factory at Childersburg, Alabama.

It is not alone that newsprint is a sorely needed commodity in the South, nor that the plant will be one of the largest of its kind in the world. Impressive as these aspects are, the acclaim that comes from all parts of the South reveals in its very expression a motivation of more inspired nature.

Judging from editorial and individual comment, the event is seen to appeal to Southerners not only as a wise industrial development, but more as an outstanding demonstration of Southern ingenuity, team work, and business ability.

With respect to the first characteristic, two points are noteworthy. The ingenuity involved in the accomplishment embraces both research and the utilization of research. The research element lies in the recent past; the utilization of it followed with swiftness and precision.

Southern records of progress shed light on the beginning of the development now entering a mature stage. These disclose that a worthy and able Southerner, the late Dr. Charles H. Herty, sparked the stimulus that now enables other Southerners to put a valuable Southern resource to practical use. In 1938 it was stated of Dr. Herty:

"He had devoted his life and talents to the enrichment of the South and America. He is making possible a fuller utilization of one of the South's greatest resources in the manufacture of newsprint and white paper from pine. His vision and tireless energy promise to make America independent of foreign sources of supply of newsprint and, while enriching the Southern farmer, go far toward the making of a greater Southern industrial empire." (MANUFACTURERS RECORD, January 1938.)

And later:

"The country has not yet started to realize the more far reaching effects of Dr. Herty's work. For more than six years he has worked to demonstrate that white paper, particularly newsprint, can be made commercially from Southern slash pine by the sulphate process. It was not a coincidence that the pulp mill movement started immediately after Dr. Herty's experiments proved successful." (MANUFACTURERS RECORD, February 1938.)

Even during the last days of this Southern scientist's life, devoted primarily to pulpwood experimentation, and with accelerated momentum after his death in August 1938 at the age of 71, the paper industry of the South sprang into notable prominence. In 1930 there were 96 establishments in the South engaged in pulp and paper manufacture. By 1945 this number had grown to 447, with many of the additions ranking with the largest in the world.

Most of the early enterprising in this industry was directed to production of Kraft paper and stock for paperboard and containers. However, great interest was stimulated by Dr. Herty in possibility of newsprint manufacture and fruition in this direction became apparent during the last year of his life when plans were laid for a newsprint mill at Lufkin, Texas. Those plans were brought to successful conclusion and the Lufkin mill now has enjoyed successful operation for a number of years.

Completed plans for the $30 million new mill at Childersburg were announced recently, and along with the announcement came the full story of Southern teamwork and business ability that made the project possible.

Even before the end of the war, in the summer of 1944, the Alabama Chamber of Commerce began planning for conversion of wartime facilities and wisely decided to combine two projects in one. The huge ordnance plant on the Coosa River presented complex difficulties when viewed for peacetime use. The South needed newsprint badly and had all the natural facilities for producing all it could use. The planners saw that the need could be used to cancel out the problem and the seeds were sown for the Coosa River Newsprint Company.

The next question was the matter of financing the project. It was decided to handle the entire venture with solely Southern capital. A related question was in disposal of the output. Southern publishers contracted for the mill's output.

Prominent on the team that brought the project through to assured culmination were industrialists Thomas W. Martin, president Alabama Power Company, Robert Gregg, president Tennessee Coal Iron and Railroad Company, and Donald Comer, board chairman Avondale Mills.

Production of the new mill is expected to be around 500 tons of paper daily of which 350 tons will be newsprint. It is estimated that the mill will draw timber supply from more than 200,000 acres, about 100,000 of which are to be owned by the company. A total of 50,000 acres of timberland have already been purchased and negotiations are under way for the remainder.

It is estimated that the plant itself will employ around 1,500 persons and that double that number will be required in the woodlands and along transportation lines.

Edward L. Norton is president of the new company, and Mr. Comer is chairman of the board.

Plexiglas Powder

(*Continued from page* 150)

characteristics of strength, dimensional stability, machinability and resistance to weathering and chemicals inherent in all Plexiglas molding powders. Detailed information on Plexiglas V may be obtained from any Rohm & Haas plastics sales office, technical representative, or the company's home office at Washington Square, Philadelphia, Pa.

Diaphragm Valves

The diaphragm type valve known as the Hills-McCanna Saunders Patent Valve is now available from The Duriron Co., Inc., in the corrosion resisting alloys, Duriron and Durichlor.

The Duriron valve is particularly resistant to sulfuric, nitric and acetic acids, being practically unaffected in any concentration and at any temperature. Durichlor is recommended for all concentrations of hydrochloric acid at temperatures below the boiling point.

The basic three unit construction—bonnet assembly, diaphragm and body—is the same in Durco valves as in all other Hills-McCanna Saunders Patent valves.

Complete information can be obtained by writing to The Duriron Co., Inc., Dayton 1, Ohio, and requesting Bulletin 623.

Roll Turner

A new roughing roll-turner tool developed by Kennametal Inc., Latrobe, Pa., comprises a series of replaceable sharp-edged solid Kennametal cemented carbide discs secured to a heat-treated shank with counter-sunk cap screws, and backed up by a hardened steel plate.

The first cut with it turns a series of circular grooves with rough humps between. The tool is then repositioned, and a second cut removes the humps, leaving a "scalloped" surface which is smoothed out with a block type of finishing tool, also made by Kennametal, Inc.

When the cutting discs become dull, they can be rotated to a new cutting position—several cuts can be made before the discs need to be resharpened; a disc that has been accidentally damaged can be quickly replaced with a new one.

These tools, designated Style RRT, are available in 4", 6", 8", and 10" widths. Complete particulars are available from the manufacturer.

Magnetic Separator

A self-energized magnetic pulley requiring no electric current to generate a magnetic field is now being commercially produced by the Eriez Manufacturing Company, Erie, Pa. The pulley is adaptable to all applications requiring automatic separation of magnetic from non-magnetic materials conveyed on a belt.

In the rock product field, Eriez Permanently Magnetized Pulleys are suggested ahead of secondary crushers and pulverizers.

No wiring or rectifiers are needed.

The unit will work effectively through belts of rubber, canvas, leather or any other non-magnetic material, thereby performing automatic separation.

For complete information, write for bulletin 501-A, Eriez Manufacturing Co., 2672 East 12th St., Erie, Pa.

Molding Machine

A newly designed ¾ ounce capacity molding machine recently introduced by The Moslo Machinery Co. of Cleveland, Ohio, developed for fast production of color chips and samples, tensile and compression bars, small custom moldings and mold test runs, and called Minijector, features a complete interchangeable cylinder and heating unit that can be switched in less than three minutes from the molding of one material or color to another, without halts for flushing or cleaning. Changing the units requires only a few minutes. The hopper is mounted directly above the heating chamber. The cylinder is heated by a thermostatically controlled 450 watt, 110 volt, AC or DC unit. A dial indicator type thermometer provides an accurate check on temperatures which may be varied up to 650° F.

Rubber Material

The Parker Appliance Company, Cleveland, announces the compounding of a special synthetic rubber material to meet the requirements of Army-Navy Specification AN-P-79. This specification cover "O"-ring packing and gasket material for use in static and dynamic sealing of aircraft hydraulic system elements.

The new compound, Parker PSI-30-5, was formulated in the company's Research and

(*Continued on page* 180)

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Train Telephone Service Operating

For the first time in the United States, passengers on certain trains of the Baltimore and Ohio Railroad, and the Pennsylvania Railroad, between Washington and New York, will shortly be able to call and receive calls from any telephone connected with the Bell System, as well as telephones in many foreign countries, while the trains are in motion, it has been announced jointly by the two railroads. The pioneering new service will be inaugurated on an experimental basis August 15.

Telephone service will be available for public use initially on the B & O's "Royal Blue" and the Pennsylvania's "Congressional Limited" in both directions between Washington and New York, via Baltimore, Wilmington and Philadelphia. On August 22 the service will be expanded to include the Pennsylvania's "Potomac" from Washington to New York and "The Legislator" from New York to Washington.

A portion of the lounge car on each train has been redesigned and set aside for the new telephone service, and will afford privacy to passengers using it. Attendants will be provided to assist passengers in placing calls and to locate persons on the train who are being called.

The train passenger's voice will travel by radio to the nearest receiving station of the Bell System's mobile telephone service, thence by wire to the called telephone. In like manner, calls can be made to passengers on the trains.

The new radio-telephone equipment, which was designed by the Bell Telephone Laboratories, utilizes two channels, one for sending and the other for receiving, so that conversations may be carried on in the same way as on a regular telephone call.

Telephone service from each train will be on the same basis as mobile radio-telephone service provided by the Bell System for motor vehicles and other mobile units, and the same rates will apply.

While designed exclusively for use of the public, the new telephone equipment will also be available to the train crews should occasion arise.

Book Review

A Century of Silver, 1847—1947. By Earl Chapin May. 400 pp. Robert M. McBride & Co., New York, $3.50.

Following his recent "Principio to Wheeling," Mr. May writes another interesting story on the transition from struggling Yankee settlers to Yankee inventors. This transition from fireside individual craftsmen to families of craftsmen, to one-horsepower factories, to water-wheel factories, to steam-powered factories and then on to modern mass production—brings us from the early days of peddler salesmanship to modern mass sales promotion and advertising. The professional salesman is now and has always been the scout, the leader, the interpreter, the trail blazer of American business. The early Yankee tin peddler operated on foot and as the book tells, was chased by wild bulls, bitten by farm dogs, took chances with robbers, held up in barns while blizzards raged and at times were allowed to sleep "no more than five in one bed," according to a sign in a New York City Inn. Producers, however, advised the peddlers to "stick to selling" because the problems of production allowed for no sleep.

Silver, the "noble metal", is traced from the pre-Christian period to our modern "silver block," and the rise and development of the International Silver Company, said to be the largest of its kind in the world.

The book celebrates the 100th anniversary of the International Silver Company, originally 1847 William Rogers & Son. The writer delightfully maintains the readers' interest by injecting humorous sidelights into the story and illustrates his book with both the original 1847's and the artistic creations of modern silverware. Here is an American industrial romance, of interest alike to modern producers and salesmen.

National Market Survey Made by Curtis Research Department

A comprehensive new study of the national market for shopping lines has just been published by the Research Department of The Curtis Publishing Company.

A marketing tool resulting from nearly two years of effort, the study consists of a map outlining the 498 market areas in the United States, and a companion booklet containing statistics which measure the value of each of the market areas as a part of the national market. The purpose of this study is to help solve some of the distribution problems of manufacturers of shopping line products.

Entitled "Market Areas for Shopping Lines," the report defines shopping line products as those for which a purchaser shops around and compares price and quality before buying. These items account for about 80 per cent of the sales in the average department store.

Donald M. Hobart, manager of the Research Department, points out in a foreword that the study is designed to help manufacturers and national distributors do the following:

(1) Measure the purchasing power of an area as it applies to shopping line sales.

(2) Determine the most profitable distribution of advertising expenditures.

(3) Establish sales quotas.

(4) Allocate sales territories.

(5) Measure the effectiveness of retail outlets in an area in meeting the needs of that area.

(6) Compare the value of the territory surrounding a center with that of the center itself as a source of shopping line purchases.

The 498 market areas outlined on the approximately four-by-six-foot map are each made up of a market center surrounded by a county or cluster of counties from which that center draws the greater portion of its shopping line trade.

In the 98-page report, two new series of data are given to compare the value of the centers with their surrounding areas as a market for shopping lines. These series are:

(1) Shopping line purchases by residents—the value of shopping line goods bought by families residing in the area.

(2) Shopping line sales—the value of goods sold by the retail outlets in the area.

For purposes of comparison, the tables also give the total number of families.

As an example of what the statistics can show, the comparative distribution of these three series of data between the market centers and their surrounding market areas for the United States as a whole, is as follows:

For the 498 market centers—purchases of shopping lines, 43 per cent; sales of shopping lines, 71 per cent; families, 38 per cent.

For the 498 surrounding areas—purchases of shopping lines, 57 per cent; sales of shopping lines, 29 per cent; families, 62 per cent.

These same comparative figures are given for each of the 498 market centers and the 498 surrounding areas.

In addition, the report presents separately indexes of shopping line purchases and sales, that is, a table showing the per cent each area is of the United States total. These indexes should be valuable in establishing sales quotas.

Potomac Soundings

(*Continued from page* 16)

credits, grants, gifts, surplus property allocations and world-bank loans.

Yet nowhere is there a central, all embracing policy or credit clearing house to coordinate how much of what shall go where.

During the first half of the present year U. S. government aids, grants and credits were at the annual rate of nearly $7-billions a year. By these mysterious processes, we are ourselves financing an insidious form of domestic inflation.

Other forms of payments on our export balance this year were sale of foreign assets in the U. S. at the annual rate of $2.1-billions, sale of gold to U. S. at the rate of $2.8-billions a year and private gifts and remittances to the tune of $700,000,000 a year.

The special committee of distinguished citizens appointed in June by President Truman to study the whole export problem held its first organization meeting on July 23. Its preliminary report will not be ready before October at the earliest. The Committee is headed by Secretary of Commerce W. Averell Harriman.

As a beginning point for its studies, the committee has before it a compilation of all grants, gifts, loans, surplus property allocations made abroad since September 1945. These gifts and credits extend to no less than 59 nations, and range from the British loan of $4.4-billions to a grant of $10,000 to Syria for educational aids. Among our primary post-war credits abroad through Lend-Lease, UNRRA, Export-Import Bank, surplus property, relief and cultural aids, are:

England	$4,400,000,000
France	1,950,000,000
China	1,482,000,000

(*Continued on page* 180)

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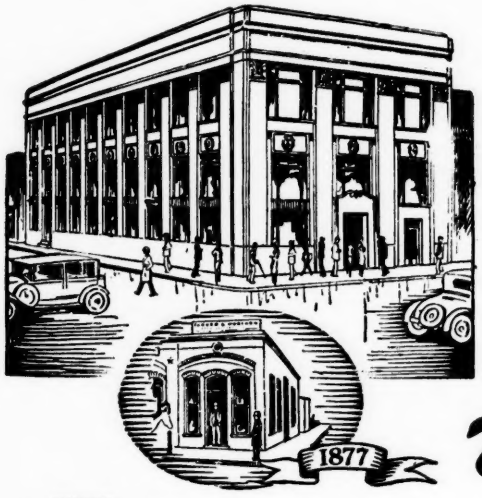

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Trade Literature

How mechanized material handling is preventing bottlenecks in the distribution of essential goods by all forms of transportation is featured in a special Transportation Issue of "Material Handling News." Also featured are authoritative comments cited from articles and addresses by leading transportation officials. Mechanized handling is stressed as a practical means to prevent huge accumulations of goods, and to break bottlenecks that retard smooth, swift flow.

A copy may be obtained on request to Clark Tructractor, division of Clark Equipment Co., Battle Creek, Mich.

A story on surface roughness measurement and its relationship to production and quality control is given in a 6-page illustrated bulletin which includes suggestions on establishing a surface roughness specification and control system. It also explains how the Profilometer is used.

Copies are available upon request from Physicists Research Company, 321 South Main St., Ann Arbor, Mich.

Robley D. Stevens, of the Regulatory and Legal Service division of Prentice-Hall, Inc., 52 Igleheart Bldg., Baltimore, announces that a special Analysis booklet on the new Labor-Management Relations Act, 1947 (Taft-Hartley Act) is now available to attorneys, accountants and businessmen. Mr. Stevens, who was formerly a law-enforcement agent of the U. S. Department of Labor, says, "a new era in labor relations is here and that this new far reaching labor law tremendously affects management which requires some sobering thoughts for those looking through rose-colored glasses."

"Slidefilms and Motion Pictures—To Help Instructors" is the title of a new catalog of selected visual teaching aids. This booklet lists discussional slidefilm kits, sound slidefilms and educational sound motion pictures for vocational training workshop, industrial, and classroom use. Free copies may be obtained by writing to The Jam Handy Organization, 2821 East Grand Blvd., Detroit 11, Mich.

A leaflet on prevention of scale formation and corrosion in the water used for equipment cooling has been published to outline different types of cooling water systems and the characteristics and requirements of each type, and briefly describe the alternative methods, can be obtained by addressing Liquid Conditioning Corp., Dept. ——, 114 East Price St., Linden, N. J. Ask for Bulletin 10.

A new bulletin, featuring marking and stamping tools for industrial marking purposes—especially designed to promote maximum safety in all marking operations—has been published by M. E. Cunningham Co.

The new bulletin, J-547, may be obtained by writing direct to the M. E. Cunningham Co., 230 East Carson St., Pittsburgh 19, Pa.

An accurate speedy method of determining the volume of water in paints and varnishes, developed during the war at the Aberdeen (Md.) Proving Ground, is described in a report for sale by the Office of Technical Services, Department of Commerce, Washington 25, D. C. The process is a new application of the Karl Fischer reagent, also used for water determination in oils, fats, waxes, glue, plasticizers, paper, dry foods and many other substances.

A new catalog section on its industrial fire hose for mill and plant protection has been issued by The B. F. Goodrich Co., Akron, Ohio, and is available upon request. The section describes construction of the present product made by the company which it says is the best it has offered in its history of more than 75 years and gives data on its single and double-jacket and rubber-covered hose, as well as couplings.

A 12-page booklet recently published by Joseph T. Ryerson & Son, Inc., gives a quick picture story of the stocks, facilities and personnel at the company's newest plant located in Los Angeles. Opened for business in October, 1946, the Los Angeles unit is the twelfth in the Ryerson nation-wide group. A copy of the booklet may be secured by writing to Joseph T. Ryerson & Son, Inc., P. O. Box 3817, Terminal Annex, Los Angeles 54, Calif.

A new, 4-page bulletin entitled "Is There Poison in Your Corrosion Resisting Alloy?" has been released by The Duriron Co., Inc., Dayton, Ohio, makers of corrosion-resisting alloys and equipment.

The bulletin deals principally with the presence of copper as a possible solution contaminator in corrosion-resisting alloys.

Free copies of this bulletin can be obtained by writing to The Duriron Co., Inc., Dayton 1, Ohio, and requesting Bulletin M-5.

The Bristol Co., Waterbury, Conn., has published a 16-page Bulletin, No. T835, on its recently announced line of Series 500 Recording Thermometers and Gauges. The new bulletin gives detailed information in the form of descriptions and pictures of the new instruments. Complete information covering chart ranges, chart drives, thermometer bulbs, and measuring elements is also given.

Selecting the proper or suitable corrosion-resistant materials or equipment has long been a problem that has confronted the chemical engineer. Bulletin K was prepared with a view toward helping those interested in such materials and equipment to determine quickly the wide range of products manufactured by U. S. Stoneware, and how they are used for combating corrosion.

Bulletin K is free, on request. Inquiries should be addressed to the U. S. Stoneware Co., Akron 9, Ohio, marked to the attention of R. W. Grace.

"Titan" large diameter brass rods are described in a new folder issued by Titan Metal Manufacturing Co., Bellefonte, Pa. Included are tables showing maximum lengths of rods in various diameters, composition of the alloys in which they are furnished, and A.S.T.M. and S.A.E. specifications for these alloys.

A new catalog has been issued by the Link-Belt Speeder Corp., of Cedar Rapids, Iowa, presenting a word-and-picture story of their ¾-yard, LS Seventy Shovel-Cranes.

A copy can be secured from any Link-Belt Speeder distributor or by writing direct to the home office at Cedar Rapids.

The Summer 1947 issue of the Bell Telephone Magazine contains several timely articles, one of which is "The Responsibility of Management in the Bell System," by Walter S. Gifford.

The Case of Material X, is a new 12-page booklet describing Fiberglas materials used for plastics reinforcement, properties imparted to plastics by these materials, and newly-developed processes for volume production of Fiberglas-reinforced plastics products. Copies may be obtained, without cost, from Owens-Corning Fiberglas Corp., Toledo 1, Ohio.

In response to numerous requests for information on methods of preventing coal-dust explosions or limiting their destructiveness, the Bureau of Mines has summarized in a new publication available data on rock-dusting and the use of water in allaying the coal-dust hazard.

A free copy of the report, Information Circular 7421, "Use of Rock Dust and Water Under the Federal Mine Safety Code in Limiting Coal Dust Explosions," may be obtained by writing to the Bureau of Mines, Department of the Interior, Washington 25, D. C.

North Carolina State Planning Board, Raleigh, N. C., has issued a report of a research study on the utilization of whole cotton as a source for oils and pulps. The State Planning Board sponsored and financed the study in the belief that it could be of great value to agricultural and industrial economy.

The three sizes of straight blade, cable-controlled bulldozers manufactured by Caterpillar Tractor Co., Peoria 8, Ill.—the No. 8S, the No. 7S and the No. 6S—are described and illustrated in detail in a new booklet "Caterpillar" Straight Blade Bulldozers.

Copies may be obtained by writing the manufacturer, requesting Form 10225.

About 25,000 copies of a handsome, profusely-illustrated booklet entitled "Land of Romance," advertising Virginia's mountain and seashore resorts, recreational advantages, historic shrines and natural beauty, are being distributed throughout the nation by the Norfolk and Western Railway, Roanoke, Va. With many illustrations in full color, "Land of Romance" has 36 pages, and is considered an unusually attractive and complete piece of travel and vacation literature. It is the first publication of its kind issued by the railway since before World War II. Outstanding feature of the booklet is its cover, a beautiful painting in montage, which depicts the historic periods and famed personalities of the Old Dominion.

The booklet is illustrated with 80 photographs, some in color, and nine color paintings, and is being distributed throughout the country by N. & W. passenger department representatives, and will be sent to libraries, Chambers of Commerce, travel agencies, hotels, newspapers and magazines.

A folder entitled "You Can Get Them All at Pyrene" listing diversified metal finishes available on either a job or contract basis is being distributed by the Metal Finishing Division, Pyrene Manufacturing Co., 560 Belmont Ave., Newark 8, N. J. Processes include Alumilite, plating on aluminum, Bonderite, cadmium plating (Udylite), copper, chromium and hard chromium plating, Cronak, enameling, Iridite, lacquering, lead plating, special chemical treatments for magnesium, Pyrene Bright Nickel, Parco Lubrizing, Parkerizing polishing, Pylumin, Pyron, sandblasting, special electrolytic and chemical finishes, tin and zinc plating.

The line of Wheel-Ezy steel hand trucks is illustrated and described in a single page, two-color bulletin available upon request from The Rapids-Standard Company, Inc., material handling equipment manufacturers of Grand Rapids, Mich. Photographs of the Wheel-Ezy show both single- and double-handled models and illustrate various uses of this versatile hand truck. Also shown is the exclusive "step climber" feature. Specifications list five different types of wheels available for the two types of models. These include the molded-on cushion rubber, Durastan resinoid, General pneumatic, air-ride rubber, and nicro-steel wheels.

Haller Machine & Mfg. Co., Inc., announces an illustrated bulletin on the Haller Model D-611 Scrap Cutter—a compact, ram-driven unit which can be used on almost any punch press. Construction features are covered in detail, and complete specifications are included. Copies of the bulletin are available upon request from Haller Machine & Mfg. Co., Inc., 7940 Tireman Ave., Detroit 4, Mich.

Ways of reducing the average $450 yearly loss many irrigation farmers suffer from weeds are described in the June issue of the Reclamation Era, official publication of the Bureau of Reclamation. In an article entitled "Fighting Weeds," T. J. Maletic, soil technologist of Reclamation Region 7, tells about identifying the various types of weeds, how they are spread, what to do to prevent the spread, and how to eradicate the weeds which have infested a farm or irrigation ditch.

The Reclamation Era is published monthly by the Bureau of Reclamation, Washington 25, D. C., in the interests of water users and other Reclamation beneficents. Subscription price is 50 cents a year to water users, $1 to others.

A booklet authored by I. F. Eldredge and issued by Charles Latrop Forestry Foundation, 1214 16th St., N.W., Washington 6, D. C., describes the forest resources of the South, their history, use and possibilities for contributing to the South's prosperity and well-being. The author is recognized as a highly qualified writer on Southern forest, having spent many years in a forestry career.

A booklet entitled The Fulness of Opportunity, published by University of the South, Sewanee, Tenn., outlines the institution's program for the future and shows in pictorial form present and proposed structures and facilities. Contents of the booklet indicate that a comprehensive program for expansion has been launched.

The Bureau of National Affairs, Washington, D. C., has issued a new International Trade Reporter. In two loose-leaf volumes, the books is a guide on shipping, packing, manufacturing, marketing, and financing suppliers. It contains official data from trade offices and agencies, domestic and foreign.

Methods of removing iron, manganese and silica from water supply are described in two new bulletins published by Liquid Conditioning Corp., explaining processes and types of equipment for the purpose. Copies illustrated by diagrammatic drawings may be obtained by addressing Liquid Conditioning Corp., 114 East Price St., Linden, N. J., Dept. MA, and asking for Bulletins 6 and 7.

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Letters

South Hill, Virginia

EDITOR, MANUFACTURERS RECORD:

One paragraph in particular in your "Little Grains of Sand" department, in the June issue of MANUFACTURERS RECORD of this year, disturbs me particularly. It is this: "When the general budget bill was before Congress, the War Department notified every Congressman by telephone that the air fields in his district would be discontinued if the War budget were reduced. When the Customs Bureau appropriation was reduced 10 per cent, the head of the Bureau took no steps to reduce in number the 33,000 employees in Washington. Instead, he notified the 25,000 field operatives that their jobs were in danger and told them to build fires under their Congressmen."

I am in no position to say anything regarding the Customs Bureau, since I have no knowledge of it whatever; however, I have been an employee of the War Department (Army Airways Communications System, Army Air Forces, to be exact) for four years, and have some slight knowledge of its workings — plus three months' experience in, and present contacts with, the War Department's Signal Corps home office (the War Department Signal Center, in the Pentagon).

From this knowledge, I say you have deliberately misled your reading public by placing in such close juxtaposition to the first sentence in the quoted paragraph, the second and third sentences of said paragraph. Misled, because the supposition on the part of your readers is more likely than not to be that the War Department cuts its employees in field offices only, just as you say the Customs Bureau does—and this I know personally to be untrue.

FROM A SUBSCRIBER.*

*Name withheld.

We see nothing misleading in our printed paragraph. Neither do we find anywhere in our critic's two-page letter any denial of the action attributed to the War Department.—EDITOR.

EDITOR, MANUFACTURERS RECORD:

May I again impose on you to have Photo copies made of ten pages published in MANUFACTURERS RECORD pertaining to Secret Bankers' Meeting of May 18th, 1920?

Thank you.

Respectfully,

W. M. HUGHES.

"Photostat copies of the 10 page article are available at $7.50 per set."—ED.

EDITOR:

In early 1946 the Rusk County Chamber of Commerce, in the interest of improving its County, began an extensive study of the clays in the County. Samples of clay were sent to the Ceramics Department of the University of Texas and other places for testing. Reports show that some of the finest ball clays to be found in the South are located in Rusk County.

Less than twelve months after this work was begun Henderson Clay Products Company, a brick and tile plant began production. Progressive business leaders realizing what an asset these clay deposits were, immediately incorporated this $350,000 plant, which will have its formal opening on April 21. The plant goes into production this week and will produce 100,000 brick or the equivalent in tile per day. The raw material supply is estimated as sufficient to meet maximum production output of the plant for the next seventy-five years. Experts in the clay industry state that this is one of the most modern plants to be found in the South today.

May we take this means of inviting you to visit Henderson Clay Products and see for yourself what local citizens can do for their community.

Sincerely yours,

PETE MCNEE, *Manager,*

Rusk County Chamber of Commerce

Henderson, Texas

(*Continued on page* 167)

C. W. LEWIS LUMBER CO.

Benton

Arkansas

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SHORT LEAF PINE LUMBER

ROUGH AND FINISHED

Select your new factory site on the

EL DORADO and WESSON RAILWAY

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In the heart of the great Oil and Gas Fields,

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Letters

EDITOR, MANUFACTURERS RECORD:

We were very pleased to receive a copy of *The Blue Book of Southern Progress* for 1947, and find it full of valuable data.

I thought I would call to your attention one thing about the life insurance page. That is, the investment series at the top of page 105 furnished by the Life Insurance Association of America is for 49 companies only. I believe this might be pointed out in future editions in order to avoid confusion. The total of the assets of all U. S. companies at the end of 1945, for example, was $44,797,041,000, instead of the $40,454,778,000 shown. Unfortunately, there does not exist a breakdown by states of the total figure, and the 49 company series is a valuable one.

The two series at the bottom of page 105 from Spectator are for some 300 companies — generally considered "all companies" for statistical purposes.

Let me say again that I think the Blue Book is most useful.

VIRGINIA THOMPSON,
Director,
Division of Statistics and Research,
Institute of Life Insurance.

EDITOR, MANUFACTURERS RECORD:

We are glad to receive our copies of the 1947 *Blue Book of Southern Progress* recently and have already made use of this publication on a number of occasions. It is even better this year than before.

Our research division is much interested in knowing the source of information on manufacturing for 1945 as given on pages 45 through 52 of the *Blue Book.* If these data were compiled by MANUFACTURERS RECORD, please give us details on the procedure followed.

HAROLD COLEE,
Executive Vice-President,
Florida State Chamber of Commerce.

EDITOR, MANUFACTURERS RECORD:

Like everyone else who has tried to do anything with the statistics of industry, I have been greatly disturbed by the failure of the Census Bureau to provide the usual census of manufacturers since 1939. Accordingly I am very much interested in the section on manufacturing in the 1947 edition of your *Blue Book of Southern Progress.* I wonder if you could tell me something about your sources and the method of gathering these materials. Are they official government figures? Or were they gathered by your organization through the cooperation of private firms?

(*Continued on page* 168)

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GUNTER LUMBER COMPANY

W. H. GUNTER, *Manager*

Manufacturers of

YELLOW PINE LUMBER

Hope, Arkansas Long Distance 13

Letters

(*Continued from page* 167)

You deserve congratulations, for they offer the only figures on industry since the outbreak of the war.

RUPERT B. VANCE,
Kenan Professor of Sociology,
Institute for Research in Social Science,
The University of North Carolina.

We believe the best answer to your inquiry of May 13 is to be found in the opening article of the 1947 *Blue Book* itself. Therein, it is explained that the statistics appearing in the *Blue Book* are based on official government figures supplemented by spot checks of individual Southern industries. The procedure of gathering the data, and computing the results was carried out entirely by the *Blue Book* staff.—Editor.

EDITOR, MANUFACTURERS RECORD:

Have you any information regarding how the cost of an identifying label on any product is charged, particularly if the manufacturer is operating on a departmental budget system?

What we are thinking of are decalcomania or other transfer signs, metal labels, wooden labels, plastic labels, or woven labels by which the name or the product and/or the name of the manufacturer is affixed to the product before it is shipped.

What we have in mind is the way the name Philco, Farnsworth, RCA Victor, General Electric is used on radios, etc., the Simmons label on mattresses and springs, the Drexel, Mengel and other labels on furniture.

We are having some question here as to whether a metal, woven or other label identifying a product can be most properly charged to cost of the manufactured product or to sales, or to advertising.

Your cooperation will be heartily appreciated.

ROBERT BARR,
Advertising Manager,
Tomlinson Furniture Co.

Note—The usual practice is to charge cost of an identifying label to the cost of manufacture, rather than to sales or advertising.—Editor.

EDITOR, MANUFACTURERS RECORD:

I have read your reprint "Potomac Soundings" by Lawrence Sullivan.

I would like to have at least six more of these reprints to send to my Congressman and Representatives in Washington and I would like to have one to send to Mr. Walling in New York. If there is a charge for these please bill me.

EARL E. WRIGHT,
Dixie Industrial Service.

New Stores Trailer Speeds Maintenance Work

Technicians and engineers at Shell Oil Company's Wood River, Ill., refinery for a good many years, have been solving big problems as a matter of course. They manufacture gasoline and oil by the millions of barrels. They turn out many of the 1069 products Shell makes from petroleum—products that range from special lubricants for industry to liquefied petroleum gas used in stoves and refrigerators in thousands of farms and rural homes. They operate a large laboratory for improving existing products and developing new ones. And recently in an effort purely incidental to main projects—they solved the legendary problems of making the mountain come to Mahomet.

The mountain, in this case, was the refinery's central stores department, main distributing point for materials needed in maintaining the many types of oil processing installations. Mahomet, instead of being only one person, or even a dual personality, was a tremendous cast of characters—the scores of men performing the refinery's maintenance operation during a routine "shutdown" of a procesing unit.

The refinery's problem was to bring the stores department to the job. The problem is an old one; it still plagues many companies and it is complicated by several vexing features. First, there is the formidable complexity of a typical maintenance job. The crew working on it needs pipe, elbows, flanges, nipples, valves, bolts, studs and enough other items to fill a stock list many columns long. And second, there is the money involved. Shutting down any unit of a plant as big as the Wood River Refinery—for mantenance or any other reason—is expensive. The longer the shutdown, the more it costs. Any big job consumes hundreds of man hours of actual work.

But the refinery found that one prop under its high maintenance costs was the time men spent going back and forth between the job and central stores for needed equipment—or the time they spend waiting while some one else ran the errand. At any rate the time spent in unproductive effort—or lost in waiting—was making official heads ache pretty severely. And so was the final problem—accounting. The paper work involved in issuing hundreds of separate items for the same job had taken on serious proportions.

Johnson Steel Spring Wire (XLO Music Wire) is available in a wide range of sizes from .003" (38,206 ft. to the lb.) up to 2.00" (9 ft. to the lb.). Produced with micrometer precision, this wire of a thousand uses—springs, wire forms, appliances—This quality product is available from Johnson sales offices.
JOHNSON
STEEL AND WIRE COMPANY, INC.
WORCESTER 1, MASS.
NEW YORK AKRON DETROIT CHICAGO LOS ANGELES TORONTO

"Unifeed" Coal Burner

The Unifeed is an automatic underfeed coal burner designed and manufactured by Link Belt Co., for use in small houses (15 pounds per hour coal feed capacity). It is of the bin fed type, is extremely compact, and consumes very little basement space.

The unit is unique in that the fan, motor and transmission are mounted on a tray or drawer which easily slides into a sheet metal box into which is incorporated the burner head assembly. Thus, in one small box, from which projects only the fuel conveyor pipe, are the essential elements needed to make up a coal burner.

Since it is of the bin-fed type, coal handling by the customer is reduced to a minimum as contrasted with the conventional hopper type which must be filled at periodic intervals, depending upon the heat demand.

Sheaves, V-Belts and the other conventional methods of changing the feed rate are eliminated from this unit, thereby reducing the necessity of manual adjustment. Air is automatically metered to the fuel bed, in proper proportion to the fuel bed depth which varies with weather conditions, by a patented automatic die-cast air control at the fan inlet, designed from both a functional and decorative point of view. Provisions were made in the control to make a simple, manual air volume adjustment where one is required in the field.

The feed screw, which is of fabricated welded steel construction for smooth, efficient coal flow, is driven by a helical double worm gear transmission powered by a capacitor type motor with built in overload protection. There are no shear pins or overload clutches in this device, the gearing being of ample strength to take the stalled torque of the motor. The operating temperature of the complete transmission is materially reduced by causing the combustion air to pass over the mechanism before entering the burning zone.

"Torque tube" construction assures absence of stress or distortion in the relatively light sheet metal members constituting the box or enclosure for the mechanism. Thrust of the conveyor screw is taken on special hardened steel thrust buttons that make up the thrust bearing.

"Chassis type" construction of the bin unit assures a rigid assembly for strength and alignment. Machined joints in the feed screw sections insure proper fit of these parts in the field as well as better alignment and operation.

Types of Businesses Now Using Allied Steel Buildings:

- Alfalfa Dehydrators
- Asphalt Plants
- Canneries
- Carbon Black Plants
- Cotton Gins
- Cotton Oil Mills
- Machine Shops
- Oil Refineries

This Allied Steel Building serves as an alfalfa meal storage building at Memphis, Tennessee.

If you have a business that will grow, Allied Steel Buildings are for you. They may be lengthened by merely removing an end and then adding the desired number of sections.

If you lease land, the portability of these buildings will appeal to you for they are easily dismantled, moved and re-erected with nearly 100% salvage.

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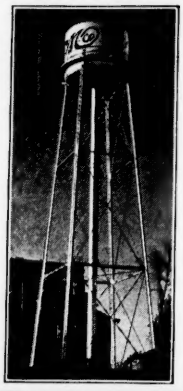

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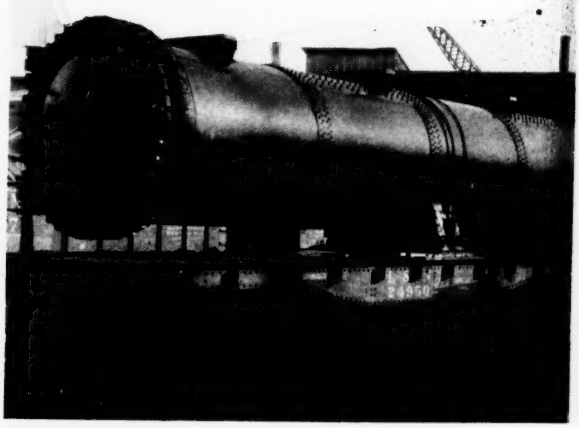
● We design and fabricate all types of storage tanks, pressure vessels, elevated tanks, etc., for the chemical, textile, and timber treating industries. A large, experienced engineering department is at your service. Write us for quotation and delivery date on that next job.



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Southern Capital Advanced to Finance Southern Business

Further evidence that Southern business men need no longer look to the Eastern financial centers for their capital requirements is provided by the recent history of the Moore-Handley Hardware Company of Birmingham.

Originally founded in 1882, this Company was closely held in a family type corporation until impending estate tax problems led the principal stockholders to conclude that some disposition of the business should be made. Acting through a Birmingham agent, negotiations were opened in 1946 with representatives of Equitable Securities Corporation, investment bankers with headquarters in Nashville, looking toward the sale of the business.

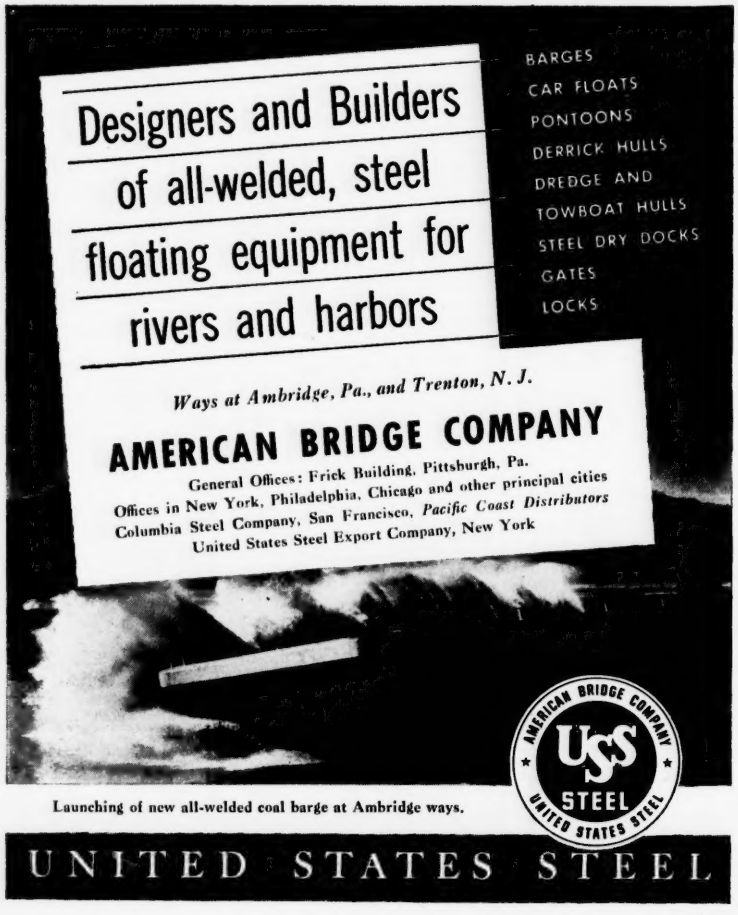
Agreement was reached late in 1946 upon a sales price well in excess of $3,000,000 for Moore-Handley's assets, except real estate and government securities which were retained by the existing company. A new corporation, Moore-Handley Hardware Company, Inc., in which Equitable Securities Corporation and Union Securities Corporation each took a 50% interest, was organized to carry on.

The first opportunity for the general public to participate in the ownership of this fine old business was provided in March of this year when $1,600,000 of 5% preferred stock and 85,000 shares of common stock were offered by an underwriting group largely composed of Southern investment houses. The great majority of the shares offered were purchased by Southern investors and are now actively traded in the leading Southern securities markets.

Reflecting the high level of business activity in the Company's trade area, Moore-Handley rolled up sales of more than $20,000,000 in 1946, and according to a recent announcement by W. W. French, Chairman, the first quarter of 1947 was the most successful in 65 years of business both from the standpoint of sales and profits.

Name Change

Tennessee Products Co., main offices Nashville, Tenn., and plants at Chattanooga, Rockwood, Rockdale, Lyles, Nashville, and Whitwell, Tenn., has changed its name to Tennessee Products and Chemical Corp. For many years the company was engaged primarily in the manufacture of basic materials, but is now processing and refining its products into a wide variety of chemicals and allied commodities.


Designers and Builders of all-welded, steel floating equipment for rivers and harbors
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STEEL DRY DOCKS
GATES
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AMERICAN BRIDGE COMPANY
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Columbia Steel Company, San Francisco, Pacific Coast Distributors
United States Steel Export Company, New York
AMERICAN BRIDGE COMPANY
USS
STEEL
UNITED STATES STEEL
UNITED STATES STEEL
Launching of new all-welded coal barge at Ambridge ways.

Louisville Plant Making Farmall Cub Tractors

INTERNATIONAL Harvester Company has recently revealed that its Louisville plant—one of three major projects in the South—is now producing the Farmall Cub tractor in volume quantities.

The unit forms the nucleus of a group of implements such as plow, planter, cultivator, disk harrow and mower, altogether to sell for less than $1,000 at the factory. This is a price achievement that International Harvester President John L. McCaffrey believes will "bring the proven benefits of mechanization to many hundreds of thousands of smaller sized farms which will have far-reaching effects in the betterment of family living on such farms."

Production of the Cub, which is a new, small low-cost unit—it sells for $545 f.o.b. factory—is the realization of an objective set several years ago when it was decided to develop a new line of farm machines for small family-sized farms.

The Cub is designed specifically for operators of truck gardens, orchards, small general farms and for caretaker work on country estates. It weighs about 1,200 pounds, has about 9¼-horsepower on the belt and 8 on the drawbar. It will plow up to 3½ acres of most soils in 10 hours. Three forward speeds start at 2, can be increased to 3 and then to 6 miles an hour. The reverse speed is 2¼ miles an hour.

Farms with low annual gross incomes are expected to be the chief beneficiaries of the new tractor. Farmers who divide attention between farm and nearby industry are expected to increase as a result of its use. The small acreage farmer will be placed in a position to compete on a more favorable basis.

First shipments of the Farmall Cub have been made to International Harvester sales branches throughout the United States. From there they will move to dealers' showrooms. When full production is reached at Louisville, the output will reach the rate of 50,000 tractors a year. The Louisville plant represents an investment of $6,700,000 plus additional funds required for enlargement and for tools and equipment.

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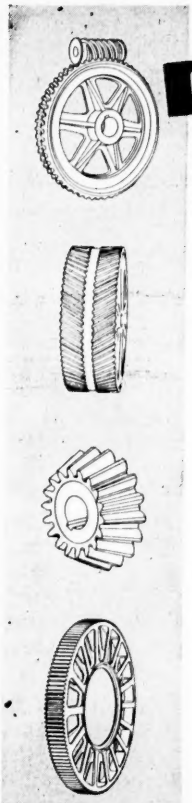

During our forty-odd years of experience in the manufacture of gears of every size and type and special machinery, we have found that it's good business to give our customers exactly the kind of work they want.

That's why every Earle gear, large or small, is made to meet your requirements exactly—to give you better power transmission, maximum strength, long life and smooth, quiet operation.

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AUTOMATIC CONTROLS

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The distinctive features in Mercoid DA Controls are the corrosion and dust-proof mercury switch; the Bourdon tube actuating element, and the outside double adjustment, which makes it easy even for inexperienced workers to set the operating range of these controls. The direct reading eliminates calculations.

Complete information in catalog No. 600. Write for a copy.

THE MERCOID CORPORATION, 4235 W. Belmont Ave., Chicago, Ill.

Men in Boots

(*Continued from page* 81)

physicists measures the minute variations in the earth's gravitational pull from point to point on the surface. This instrument is called the gravity meter.

The magnetometer works on the principle that the earth is like an enormous magnet, radiating lines of force from its poles. Now most of the materials in the earth's crust act like insulators to hinder the passage of these lines of force—all except certain materials like magnetite. Each rock layer has its own way of warping the lines of force from their normal course. This crowding and distortion of the magnetic lines of force is measured by the magnetometer, and the results interpreted and plotted on maps. It is particularly valuable in spotting buried granite ridges.

A Job for the Seismograph

A closer check can be made by the explorers with the seismograph. This interesting gadget is based on the principle that if you set off a small charge of explosive near the surface, the sound waves will travel down through the earth in all directions from the point of the shot. Like light striking a mirror, some rays will be reflected back to the surface from underlying strata; others, like light passing through a prism, will go right through the sub-surface beds—refracted at an angle. About 90 per cent of this work is aimed at picking up the reflected sound waves, which can be recorded at successive stations along a line from the point of the explosion. The altitude of a marker bed may be mapped by measuring the travel times of sound waves.

So the most extensive and most scientific oil hunt in the 87-year history of the industry is under way. What are its chances of success? Well, mathematically, you might figure them at one chance in ten or twelve of a wildcat striking oil, one in twenty of a producing field developing into a major oil reserve.

Many geologists believe there is as much oil to be discovered in the United States as our present proved reserves plus all we have produced in the last 87 years. Since Drake's well in 1859, the industry in this country has brought to the surface some 31 billion barrels of petroleum. Proved reserves in the ground are estimated at another 20 billion barrels. So if this guess is correct, there are another 50 billion barrels in the United States waiting to be found. Many, many years will pass before this reserve is found and produced to exhaustion. The vast ocean of oil now in the ground but unrecoverable by present methods offers another backlog which stands as a challenge to petroleum engineers.

This gives you some idea of the problem that awaits the men in boots. That they will meet it not only with war-sharpened scientific developments and the know-how beaten out on the forge of long experience, but also with the competitive spirit and resourcefulness that laughs at discouragement, no one who knows the record of the American oil man can doubt.

FOR SALE

Flour Mill, Coal & Lumber Yard; R. R. and Farming Center of Ky.; well constructed buildings; modern machinery; 3 trucks; railroad siding; no competition; $100,000 annual business; walk-out at $16,000.

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7½ ton OVERHEAD CRANE
37' span
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Potomac Soundings

(*Continued from page* 156)

Greece	790,000,000
Philippines	695,000,000
Italy	538,000,000
Belgium	494,000,000
Germany	400,000,000
Netherlands	377,400,000
Turkey	270,000,000
Japan	267,000,000
Russia	250,000,000
Canada	138,000,000
Finland	92,000,000
Mexico	87,000,000
Iceland	65,000,000
Norway	56,000,000
India	50,000,000

Rubber Material

(*Continued from page* 154)

Special Products Division, designed to withstand wear, heat and cold, for physical properties and aging, and for precision manufacture.

Toggle Clamp

Detroit Stamping Co., manufacturers of De-Sta-Co production clamping tools is now manufacturing a new portable toggle clamp. Model 464 Plier Clamp was designed for sheet metal work, plastic sheet cementing or laminating, and other operations necessitating positive pressure on relatively light gauge materials up to ⅜" total thickness. Toggle lock action holds parts in position for drilling, riveting, welding, gluing on such products as sheet metal ducts, housings, cabinets of plastic, wood and metal, auto bodies and aircraft assemblies.

Descriptive bulletin available by writing to Detroit Stamping Co., Dept. K, 381 Midland Ave., Detroit 3, Mich.

■ **Inventions for Sale**

MANUFACTURERS—Write for our FREE Classification Sheet of Inventions for Sale, covering 135 main subjects, and in one or more of which you will doubtless be interested. ADAM FISHER CO., 578 Enright, St. Louis, Mo.

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For sale or make on Royalty. Patents No. 2,250,243 complete spectacles, with individual adjustable arms. Will make the most beautiful spectacles in either metal or shell mountings. J. P. Williams, Waynesboro, Miss. Phone 187-J.

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